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WASHINGTON MEDICAL ANNALS

CASE OF ANEURYSM OF THE DESCENDING THORACIC AORTA, WITH SOME REMARKS.*

By WILFRED M. BARTON, M. D.,

Washington, D. C.

The anatomical specimen which I have the honor to present to the Society, with a history of the case and some remarks, is an aneurysm of the descending thoracic aorta, removed from a patient who died August 10, 1904, several hours after an exploratory laparotomy. The patient's death was immediately caused by a rupture of the sac into the left pleural cavity. Outside of any interest which the anatomical specimen may present, the observation seems to me to merit some attention from a clinical standpoint, because of the fact that the aneurysm was not diagnosed until a few hours before the death of the patient. It gave rise only to the symptom pain. The specimen was, by an unfortunate oversight, not immersed in a preservative solution until after it had contracted to about one-half its original size.

The history of the case is as follows: Mr. John Harvey L.; age, 43; occupation, carpenter; married.

Father living at 77; mother about 60 and healthy; brothers and sisters, three, alive and healthy. The patient was never sick in his life before the present illness. When about 20 years old he had a small ulcer of the penis, which healed rapidly, and was never followed by any symptoms. About twenty-two years before the present illness he was injured while working on a small back building, which caved in and struck him on the back. He was confined to his bed about four days and then returned to work, but had to quit on account of pain in the back. He then stayed away about three weeks, when he resumed his occupation, entirely cured, so far as his sensations were concerned. Nine

* Read before the Medical Society of the District of Columbia, December 7, 1904.

years ago he suffered a traumatism of the left side of the chest, which was diagnosed as fracture of the ribs. He resumed work, however, in a week.

In December, 1902, or early in January, 1903, he began to complain of pain in the epigastrium. He would wake up at night with a feeling of weight in that region. He consulted me at that time, and as the symptoms were apparently connected with the digestive function, I treated him in a variety of ways for two or three months without results. About April, 1903, I gave him a test breakfast (Ewald), and pumped the stomach. The contents were examined by Dr. Behrend, who found total absence of hydrochloric acid, with suppression of proteolytic digestion, and upon this ground a tentative diagnosis of *achylia gastrica* was made. The patient's diet and treatment were consequently laid along these lines. He ate crackers and milk, cereals, soft-boiled eggs, soup, fish and poultry. Pancreatin was administered and the stomach occasionally washed. This treatment was kept up continuously during the entire summer of 1903, but the epigastric distress became greater and the nocturnal paroxysms more frequent and severe. During this time, however, he went daily to his work, walking to and from. He would often have a paroxysm after his return from work and, thinking it was due to walking, he commenced to ride, but the paroxysms were as great as before. Gastric sedatives of various kinds were used—menthol, bismuth, chloroform—without result. The actual cautery was finally applied to the epigastrium. The effect of this seemed to be to produce a temporary migration of the pain to one or other side without alleviation. This condition continued through the winter, the pain becoming worse. Every day he would have one or more paroxysms. Finally, January 6, 1904, he went to bed and remained in bed two weeks and in the house a month. At this time Dr. Behrend saw the patient in consultation, and a physical examination was made with the following results: The belly was soft and everywhere sonorous on palpation. In the neighborhood of the epigastrium, nothing abnormal could be felt. The epigastrium was tender, particularly to deep pressure, just below the xiphoid cartilage. The patellar tendon reflexes seemed slightly exaggerated, and on the left side there was some spasticity. The different sensitive reflexes were normal. There was nothing to be noted abnormal about the eyes, and vision was unaffected. The lungs

were sound. The heart was apparently normal in size, situation and rhythm. The vertical station was painless, and on walking a slight stiffness on the left side was noted. The toe of the left shoe was markedly worn. The vertebral column presented a gibbosity involving the dorso-lumbar region, including altogether about four spinous processes. The deformity was not noticeable except when the patient was undressed, and became more evident on flexing the spine. There was no lateral deviation, and pressure upon the spinous processes with any degree of force did not elicit pain. The urine contained neither albumen nor sugar, and the quantity was about normal. The general condition was fairly satisfactory, there being no cachexia, emaciation or even anaemia. The temperature was absolutely normal. No dyspnoea, no fremitus, lungs apparently normal. The only complaint was epigastric pain.

Dr. Behrend suggested aneurysm at this time as a possible cause of the phenomena, but, as there was absolutely no confirmatory evidence to support the view, he was inclined rather to attribute the pains to achylia or to some centric disease producing spinal irritation. Iodide of potassium was administered, and the patient experienced some relief, but morphine was required to help him through the nights. About the last of February the patient went out again to work, but could do no more than appear and act as a kind of superintendent. The pain had become more or less constant, and he would frequently stand at the end of a bench and stoop forward, resting the body horizontally, which would afford him some relief, and which position he would frequently assume at home, using a table or sofa for a support. Early in April he came to my office and said that his pain had become so agonizing and severe that he thought he would prefer to die rather than suffer a continuance of it.

April 2, an X-ray photograph was taken by Dr. Vale, who also made a physical examination of the patient. The radiographic examination showed a mass extending from the seventh to the eleventh dorsal vertebra. This, together with the history of persistent epigastric pain, and the presence of spinal rigidity and exaggerated knee jerks pointed so clearly to involvement of the vertebrae that Dr. Vale thought the case should be treated tentatively as one of Pott's disease—though not committing himself finally to such a diagnosis.

Assuming, then, that the case was one of Pott's disease, the classical treatment of that affection was instituted. April 3, the patient was suspended, and a plaster jacket applied extending laterally from the axillae to the trochanters. The next day he complained of intrathoracic pressure, and some dysphagia. In a few days he began, for the first time, to complain of pain in the back, also an aggravation of his epigastric and latero-thoracic distress. He kept the cast on for nearly three weeks, and finally, on account of his continuous complaint that his sufferings were increased, it was removed. The result of removing the cast was to produce a temporary alleviation, but it only lasted a few hours and the pain returned. Added to this was a feeling of great weakness in the dorso-lumbar region. In conformity to urgent solicitation, the patient consented to wear the cast laced, and did so, off and on, until early in May. After the cast was removed, he was given occasional small doses of morphine and chloral. The latter drug was soon abandoned, as he had an attack of delirium after taking about two or three grams. After this attack, he stayed in bed for five weeks, and during the day his pain was somewhat relieved, but he could not pass the night without painful paroxysms requiring small doses of morphine. During this interval, an injection of .0010 m. of tuberculin was given. Ten hours afterward his temperature registered 99 degrees, and he was pale and complained of some exaggeration of pain for some hours. He was given organic iron internally and cacodylate of mercury by injection. An attempt was also made to relieve the pain by intraarachnoid injection of cocaine. At this time he was placed on an inclined board with an extension apparatus applied to the head. This was continued for two weeks. He was relieved some by the extension while it lasted, but the pain would return and be aggravated in the interval.

At the end of these five weeks (early in June, 1904,) a second cast was applied, this time without suspension, and with the patient placed in slight artificial lordosis. He was somewhat relieved for a few days and was correspondingly encouraged, but the pain soon returned with dysphagia for solids and liquids, and at the end of a week he cut off the cast himself. After this was removed the dysphagia remained to a certain extent up to the end. He said that it required several swallows to make the food enter the

stomach. The pain was now principally in the left side over the lateral surface of the lower ribs. It now began to extend higher up into the precordial region. For a while he wore a brace made of canvas reinforced with metallic strips. Toward the end of June he was examined by Dr. Mitchell. As a result of this examination the Doctor was inclined to the theory of some gastric neoplasm, and advised an exploratory operation. He also advised the patient to go to Baltimore and be there examined. This he did in the middle of July, at which time he was examined by Drs. Finney, Friedenwald and several others, without any definite diagnosis being made, these physicians agreeing, however, that an exploratory laparotomy should be performed.

The patient returned to Washington, and August 9, entered the Columbian University Hospital, and on the morning of the 10th a coeliotomy was performed by Dr. Mitchell. The operation revealed a stomach to all intents macroscopically healthy. The liver was normal. On raising the left lobe of the liver and the stomach, and exploring the subdiaphragmatic region, a pulsating mass could be felt and seen. Its pulsations were communicated to a considerable area of the dome of the diaphragm and could be made more evident by pressing a padded instrument against that muscle. The abdomen was closed. The patient on awakening from his anesthetic began immediately to complain that the old pain was still present and in no way relieved. At 2 o'clock the following morning he suddenly expired.

Autopsy.—This was performed by me eight hours after death. On opening the thorax an enormous clot was found in the left pleural cavity, weighing perhaps 800 grams, pushing down the diaphragm below. The larger part of the left pleural cavity, its lower two-thirds at least, was filled by the clot, which had pushed the left lung before it upward and toward the median line. The lung was compressed, partially atelectatic, but not tubercular. Neither trachea nor left bronchus was compressed. The oesophagus was pushed forward somewhat from the vertebral column. The heart was normal in volume, the left ventricle being neither hypertrophied nor dilated; it was slightly fatty. The pericardium was healthy. On removing the enormous coagulum from the pleural cavity it was found to be crimson and almost liquid above, darker and more solid below, and at the very bottom, close to the diaphragm, was found light in color, tough,

fibrinous and organized. The blood being removed, a large aneurysm of the descending thoracic aorta became visible.

The formed character of the whole lower portion of the clot contiguous to the diaphragm showed that hemorrhage into the pleural cavity had been gradual, and had extended over a more or less considerable period of time prior to death. There is no means by which the length of time could be gauged unless the skiagraph, taken in April and showing a considerable area of obscurity in the left lower thoracic cavity, indicated that already a considerable extrasaccular hematoma had formed. Such a supposition is strictly in accord with what is known to have occurred in other instances. It would seem that many reported cases demonstrate that partial rupture of an aneurysmal sac may occur into the pleural cavity, pulmonary tissue, bronchi or oesophagus, and blood be intermittently extravasated weeks or months before the final break occurs which produces death by exsanguination.

The aneurysmal sac lay on both sides of the vertebral column, but much more so on the left. It began above at the upper region of the body of the seventh dorsal vertebra, and ended opposite the intervertebral fibro-cartilage separating the eleventh and twelfth dorsal vertebrae. Its lower end, therefore, was contiguous to the diaphragm and only a half inch of undilated aorta was visible above the opening in the diaphragm through which the vessel passed into the abdominal cavity.

The aneurysm had caused erosion of the bodies of the 7th, 8th, 9th and 10th dorsal vertebrae, more marked on the left side than on the right. The intervertebral cartilages were not affected. The total length of the sac was 7 inches. It contained about 300 cc. of dark, semi-fluid blood, which on the left side, toward the periphery of the sac, became firm and fibrous. In several places on the left side the sac was thin, and likewise posteriorly this thinness was so great as to lead to several tears in its periphery, produced by the manipulations required to separate it from the vertebrae and oesophagus. At no other point was the aorta sacculated or even dilated beyond its normal caliber. The shape of the aneurysm was almost cylindrical, because of the suddenness with which the sac assumed a maximum diameter after its commencement, both above and below. There were apparently two perforations, both connected with the left pleural cavity. The whole interior of the sac was lined with old resisting stratified

coagula, which were separated at the point of rupture. After removing these clots the wall of the sac was found to present an advanced degree of atheromatous degeneration. It was thick and wrinkled. No ulcerations were found, and no deposits of calcareous matter.

* * * * * *

A study of the literature of the symptomatology of this affection is not very satisfactory in its results, because it does not lead to the discovery of any one symptom or set of symptoms, subjective or objective, by which the condition may be infallibly recognized. It has no characteristic semeiology. An aneurysm of the descending thoracic aorta does not give rise of itself to any symptoms, and it is only by the displacement, compression, or lesion of neighboring organs which are produced by it that certain functional disturbances may appear to attract attention.

It would seem *a priori* to be impossible, but there are many facts to substantiate the assertion that a comparatively voluminous tumor of this character may develop in the thoracic cavity, produce extensive lesions of ectopia and compression and finally bring about sudden death by rupture, without giving rise at any time during the course of its development to any symptom. And again, it is also true that the subjective lesions of contiguity produced by the aneurysm when they do exist are not characteristic, and may with equal propriety be ascribed to a different cause. Indeed, the variability of these symptoms, especially in the early history of the disease, will impress any one who will choose to read the history of cases reported in the literature.

Pain is the most frequent symptom encountered. In my own case it was practically the only symptom. As a general proposition, however, it is less constant in thoracic than in abdominal aortic aneurysms. Stokes said long ago that if it is often possible to diagnose a case of abdominal aneurysm by the symptom pain it is only rarely possible to diagnose a supradiaphragmatic aneurysm in the same way.

The pain in aneurysm of the descending thoracic aorta seems to vary in its situation, in its intensity, its characters, and its irradiations, in different cases and at different times in the same case. Some authors, as Gendrin (*Rev. Med.* 84, 3), have regarded pain as a constant symptom, but numerous cases are reported which serve as a refutation of this assertion.

A considerable number of cases are reported where the patients complained of a fixed pain somewhere along the spine, as in the interscapular, dorso-lumbar, or even lumbar region. In some of these cases the pain was not particularly severe, and consisted rather of a sensation of restraint or discomfort perceived only at intervals, sometimes increased by manipulation or pressure, at others appearing only as a dorso-lumbar sensitiveness during the execution of certain movements, particularly extension of the vertebral column. In a greater number of cases we find the pain has been reported of a severe character, more or less constant, with distinct paroxysms or exacerbations exasperated by motion, by the work of digestion, or even by moral impressions. The attempt to explain the philosophy of this pain has given rise to much conjecture.

A favorite hypothesis refers it to vertebral erosion. Law (*Dublin Jour. Med. Sci.*, 1844,) and Greene (same journal, 1846,) were both advocates of this view, and the latter asserted that the pain always attained a maximum intensity by virtue of this erosion, and that also a relation existed between the pain and irritation of the sensory roots of the cord. In this manner he explained the rather frequent coincidence of neuralgic pains and vertebral erosions. We now know that this explanation of the pain is too exclusive and that cases exist where not only dorsal pain, but any pain whatever, is absent, notwithstanding the presence of extensive erosion, and almost complete destruction of the vertebrae.

The pain has been also attributed to perisaccular inflammation, and by Morgagni, in his XXI epistle, to irritation of the contiguous meninges covering the cord.

Perhaps in some cases, stretching and dragging upon the periaortic plexuses of nerves, sympathetic and otherwise, may account for the pain.

It is said that the pain of thoracic aneurysm is always increased by exercise, by coughing, sneezing, mental excitement, or by any motion producing an elevation of blood pressure. For many months in my case, there was absolutely no immediate connection traceable between exercise, work, or any motion whatever, and the pain which was frequently nocturnal, was just as apt to be aggravated under one set of circumstances as under another.

Among the circulatory disturbances which are reported as occurring in aneurysm of the descending thoracic aorta, there is none which may be regarded as in any way pathognomonic. Palpitation is alleged to have occurred in a considerable number of reported cases, but is a very undeterminate symptom, especially as it is usually intermittent. Cardiac hypertrophy sometimes happens, but, judging from the opinions of a few writers who have occupied themselves with this lesion, it is not the result of arterial ectasia, and is often absent. Cardiac displacement has been noted in all cases where the arterial tumor was large. In such an event, the area of precordial dulness has been found greatly amplified, and endowed with abnormally neergetic pulsation; nevertheless cases have been diagnosed as simple cardiac hypertrophy. Popham called attention, however, over half a century ago, to the fact that in such a case, while the precordial area will be endowed with vigorous and perceptible pulsations, the pulse will be found weak, in singular contrast with the apparent force of the cardiac beats.

In aneurysm of the descending thoracic aorta, there is never any mention made of dilatation of the superficial veins on the front of the thorax, although the azygos veins must be, and frequently are, compressed. This is no doubt due to the liberality with which the azygos and caval venous systems are connected by anastomosis.

The chief digestive troubles actually reported are epigastric pain, slowness or difficulty of digestion (*bradypepsia*), pyrosis, mucous or alimentary vomiting. In a thesis by Vallois there is recorded an oral communication of Rendu, who treated a naval officer some time for alcoholic gastritis, because of the dyspeptic troubles and accentuated gastralgia of which he complained. His symptoms continued, and two years later he developed a characteristic pulsating tumor in the dorsal region, dying finally with sudden hematemesis.

Dysphagia is mentioned as one of the digestive disturbances rather frequently encountered, but with respect to aneurysms of the descending thoracic aorta this symptom is not often reported. The oesophagus, though contiguous to the aorta in this locality, is situated to the right or in front of the vessel, and is too movable to be much compressed. Besides this, the aneurysmal sac usually develops toward the left. Notwithstanding these conditions, a few cases are reported where marked dysphagia was en-

countered. It appeared in my case after the application of the first cast.

If one should suspect the presence of aneurysm, he would, of course, abstain from using the sound in treating such a dysphagia. The passage of the stomach tube in my case was abandoned in the fall of 1903.

Scheele (*Berl. klin. Woch*, 1878,) regarded as pathognomonic of aneurysm of the descending thoracic aorta, a deep-seated pain in the region of the sac, produced by compression of the two femoral arteries; the compression by augmenting pressure within the tumor exaggerating the pain. The application of this test, however, is far from being exempt from danger. Death occurred in several hours in a patient after Saundry had applied the test of Scheele before his students to demonstrate its accuracy.

Some of the patients in recorded cases of aneurysm of the descending thoracic aorta have complained of sensations of pulsation in the dorsal region, apparently coinciding with diastole of the aneurysmal sac.

It seems natural to suppose that the sac itself, in developing, would compress and irritate the trunks of neighboring nerves, giving rise to neuritis and pain along the course of the nerve. The intercostal nerves, by reason of their situation, must often be injured in this way. Such lesions would account for the intercostal neuralgic pain transmitted into one or the other side of the chest, or even well around to the front as far as the precordium or epigastrium. In some cases the pain has been felt under the false ribs, between the shoulders or encircling the entire thorax, like a band or girdle.

Next in point of frequency and importance to pain as a symptom mentioned in reported cases of this disease, is some disturbance of respiration. Respiratory difficulty has seemed to be often a very precocious sign, and in some cases it has been the first and only complaint of the patient. The chief variety of respiratory difficulty seems to be an intermittent paroxysmal dyspnoea, varying in intensity from a slight difficulty in breathing, and in producing thoracic plenitude, to agonizing orthopnoea, and frightful suffocation, precursors of death. Compressory atelectasis and pressure upon the pneumogastric nerves have all been suggested as possible explanations of this symptom. It will be remembered that in the history of my own case, there is no mention of any respiratory

difficulty whatever. The reason would seem to be that the aneurysm was far too low down to exercise any pressure, direct or indirect, upon the left bronchus, which crosses the descending aorta on a level with the body of the fourth dorsal vertebra.

When we come to consider the digestive disturbances complained of in these cases, and which formed a very considerable item in the clinical picture of the case herein recorded, the literature is by no means silent. Indeed it has been a rather common mistake to regard cases of this variety of aneurysm as being examples of dyspepsia, especially in the early stages of the disease, so much stress being laid by the patient himself upon the aberrations of his digestive functions.

What is to be learned from reported cases concerning the physical signs of this disease? We learn that at an advanced stage of its development, provided the aneurysm does not rupture, it will appear at some point, usually posterior on the superficies of the thorax, and there by communicating visible, audible and perceptible evidence of its presence, come within the range of diagnosis. The aneurysm reported herein did not give us an opportunity to arrive at a diagnosis in this manner, and, as a matter of fact, not more than one-tenth of the cases reported have lasted long enough for the tumor to make its appearance in such an unequivocal fashion. Besides, to make a diagnosis at such a stage is of no advantage to the patient and no credit to the physician. But as a matter of simple fact an aneurysm developing upon the thoracic aorta in its descending portion is so very deeply situated that it is absolutely beyond reach of the ordinary means by which the interior phenomena of disease in the chest are elicited and their meaning interpreted. Percussion and auscultation will not reach to a point seven inches from the exterior.

The phenomenon of pulse retardation advocated by Francois Franck as an aid in diagnosis of the situation of aortic aneurysm is not practicable except in aneurysm of the arch of the aorta, and not of its descending portion. Besides the application of such a method is clinically very difficult, and would not be carried out, we venture to say, in any hospital in this city.

Now, if we will take any reported case of this affection where there were symptoms, leaving out those cases, of course, where the entire evolution of the disease has been latent, we shall find that the patient has complained more or less ardently of one or more

of the symptoms above enumerated. There will have been boring pain in the back, dyspnoea, palpitation, gastric distress, dysphagia. But none of these symptoms singly is pathognomonic, and even when united, which is rarely the case, they are not sufficient to enable an exact diagnosis to be made. Nevertheless they are exceedingly important as denoting the presence of intrathoracic compression, and, as aneurysm in this locality is not so very rare, it would seem that at least a strong suspicion should be aroused by their conjunction.

The predominance of certain symptoms which simulate some other disease is the ordinary cause of error in diagnosis, and in the case reported in this paper according as one or other observer laid stress upon this or that particular manifestation, in the light of his own personal experience, we had opinions which included Pott's disease of the spine, *achylia gastrica*, sarcoma of mediastinum, *carcinoma ventriculi*, aneurysm, incipient tabes, etc., the number of diagnoses being limited practically only by the number of gentlemen who saw him. And if one will consult the literature of this disease he will see that identical mistakes have many times been made. The dysphagia has been attributed to oesophageal cancer, dyspnoea to emphysema, hemoptysis to tuberculosis, spinal deformity to Pott's, dorso-lumbar pain to cancer, vertebral disease to myelitis, palpitation to cardiac hypertrophy, extension of pain into lumbar regions to nephrolithiasis, epigastric distress to dyspepsia, etc.

In my case every inch of the patient's thorax was many times auscultated, but with uniformly negative results.

It is recommended that in suspected cases it is well to auscultate with the trumpet of the stethoscope between the patient's teeth, thus detecting a murmur or thrill transmitted through the tracheal air column. I regret that this was not done.

So far as inspection of the chest went, front and back, this was absolutely negative.

The value of the X-ray in the diagnosis of thoracic aneurism is held to be very considerable by recent authorities. But mine is a case where the evidence of actinography was not sufficient to fix the same.

Dr. Kleinschmidt related a case of aneurysm of the aorta in a colored man. The axillary artery, and then the subclavian, were ligated to no purpose. Death finally resulted from rupture.

Dr. Vale exhibited the X-ray negative in Dr. Barton's case. He said that with the X-rays an aneurysm of the arch and upper part of the thoracic aorta could be very promptly made out. In fact, the slightest dilatation and tortuosity of the arch could be readily recognized, in illustration of which he presented the X-ray picture of a case seen with Dr. Behrend five years before, the diagnosis being confirmed at the necropsy.

Dr. Barton had emphasized the difficulties in diagnosing aneurysm of the lower part of the thoracic aorta. The point that Dr. Vale wished to make especially was, that in this case the X-ray appearances simulated those of early Pott's disease: There was a shadow superimposed on the cardiac shadow, extending from the 7th to the 11th dorsal vertebra. And the necropsy verified the accuracy of the X-ray diagnosis as to the vertebrae involved. The vertebrae named were eroded by the pressure of the aneurysmal sac, and it was this pressure which had given rise to the symptoms simulating Pott's disease—exaggerated reflexes, slight spasticity in left leg, rigid back muscles, and above all an epigastric pain, which was unrelieved by any therapeutic measure. The X-ray negative had revealed all that could be in that way, and if he had only confined himself to its literal interpretation, the diagnosis would have been: "A mass extending from the 7th to the 11th dorsal vertebrae and giving rise to pressure symptoms," and this diagnosis would have been correct. More than anything else, a low blood pressure had excluded aneurysm in Dr. Vale's mind, but he now knew that low blood pressure could exist in the presence of extensive atheromatous changes. On account of the many atypical features of the case, syphilitic spinal caries was considered, and, obtaining a history of probable infection, he had recommended a course of specific treatment. A malignant new growth was excluded by the history. The one point that Dr. Vale had insisted on was that the shadow extending in the X-ray negative from the 7th to the 11th vertebrae outlined the seat of the disease, and that the epigastric pain and other symptoms were central in their origin, so that when a laparotomy was suggested, with special reference to exploring the stomach, he had stated that the case was absolutely inoperable from that standpoint.

TWO CASES OF DISEASE OF INTESTINES; INTUSSUSCEPTION AND MYOMA.*

By G. W. WOOD, M. D.

Washington, D. C.

1. *Intussusception in infant.*—The child was taken ill with the usual symptoms of intussusception, except that there was no diarrhoea. On the following day the child was very ill, and Dr. Wood discovered the tumor. The mother would not consent to operation, believing that death was certain. Castor oil gave temporary relief, but the baby died two days later. At the post-mortem examination a tumor was found in the intestine, about three inches from the rectum. It was at first thought to be a growth, but further examination showed that it was a necrotic tumor—an invagination of the intestine.

2. *Myoma of Intestine.*—The patient, a woman, was taken ill in November, 1903, with nausea, vomiting and abdominal pain; there was also a tumor in the right lower abdominal quadrant, and a diagnosis of appendicitis was made. Dr. Bowen, who was called in consultation, agreed in the diagnosis, and an operation was performed at the Columbia Hospital. When the incision was made, about a pint of pus escaped, but the appendix could not be found; a concretion and gangrenous mass was all that showed where the organ had been. The appendix itself, had evidently sloughed away. The patient recovered from the operation, but, in April, 1904, the wound began to suppurate freely. It was opened along the line of the old incision under cocaine, and a number of small calcareous masses were removed. Again there was recovery, but later she had a series of chills. At the Garfield Hospital, leucocytosis was disclosed, but no malarial parasite was found, and anti-malarial treatment was without avail. A week later, a swelling developed over the liver and a diagnosis of abscess of the liver was made. An operation substantiated this view. The woman, who was very weak, died the next day. At the autopsy a tumor was found, binding together the ileum and duodenum. A normal appendix was also found, and there was no evidence of appendicitis. The right kidney was diseased. No satisfactory conclusion could be reached as to the cause of primary illness.

*Reported with specimens to the Medical Society of the District of Columbia, January 18, 1904.

Dr. J. Ford Thompson recalled a remarkable case of intussusception which he had reported to the Society a couple of years before. It was of the ileo-caecal variety, and the tumor, formed by the invagination, protruded four or five inches from the anus. The incision was therefore made outside the body in the protruding mass, exposing the caecum and appendix. The tumor was excised, the ends of the intestine were sewed together, and the whole slipped back into the pelvis. The patient made a good recovery. The case was unique; he knew of no other like it in literature.

He had just operated upon another remarkable case. The patient was a child nine months old, who had had "trouble with the lower rectum" from birth. The trouble consisted mainly in obstinate constipation, with bulging in perineum. This morning he had put the child under chloroform. The anus appeared normal, but, if anything, a little more full on the right side than the left. With the finger in the rectum, and forcible downward pressure exerted on the abdomen above, he noted a tumor which he thought at first to be some form of intussusception, which had fallen down into the pelvis. Further examination showed that it was unusually hard. He made an incision within the rectum, about one and one-half inches long, just above the external sphincter, in the right lateral wall. After passing through the normal tissues, the knife entered a pouch. The incision was lengthened, and from the pouch, or sac, he shelled out a mass of chalky, hardened faeces about four inches long. By further pressure from above, he was enabled to remove four inches more of the same material. Thus there were apparently two rectal tubes, going up as far as he could reach; the internal surface of the sac had all of the appearances of the normal bowel. He used irrigation, but was not certain whether water passed from one tube into the other or not. He stitched the mucous membrane of the pouch to that surrounding the incision, and the child had now no inconvenience whatever from the anomaly.

The only plausible explanation seemed to be that the case was one of double rectum. Search of his books, however, showed no reference to such a condition. Malformations of the rectum were reported to occur in about one instance in 10,000, and from this one could see how rare such a case as this must be. He hoped that Dr. Lamb could offer something in the way of explanation. In development, the rectum was divided into two tubes, which later united above; and most anomalies had been ascribed to this fact—failure of the two to unite. He could not see, however, how this could in any possible way account for the condition which he had described. The blind tube may have been a diverticulum, but he knew of no such case as this. The faeces had evidently been collecting from birth. Intussusception, in any form, was excluded.

Dr. D. S. Lamb believed that the case was one of diverticulum of a very rare kind. He had not heard of such an anomaly as a double rectum, and could not conceive of such a thing. Rectal diverticula were very rare except in a small form. The case was of unusual interest.

Dr. Balloch suggested that Dr. Thompson's case might perhaps be explained on the theory of a congenital stricture near the sigmoid. These were not uncommon. Faeces, gradually accumulating, stretched the intestine and forced it down to a point opposite the lower rectum, and Dr. Thompson, by his incision might merely have made an anastomosis between the sac and the rectum. According to this view, the case was not necessarily one of double rectum.

Dr. Thompson did not concur in this view. The trouble began when the child was but three days old. Anatomically, the explanation was to his mind impossible.

POSITION IN PLACENTA PREVIA.*

By MILLARD F. THOMPSON, M. D.

Washington, D. C.

I invite your attention tonight to placenta previa, a pathological condition which perplexes the practitioner to his wits' ends. My statements are partly from my own experience, but largely from authors whom I have consulted and herein quote.

Placenta previa is the condition in which the placenta is previous, or goes before the fetus. Dr. King's "Manual" gives it as "an implantation of the placenta abnormally near to, or more or less over the internal *os uteri*."

Edgar says: "Placenta previa is the attachment of the placenta to *any portion* of lower segment of the uterus."

Edgar's division of the uterus, and a very comprehensive one, is into three segments or zones—the fundal zone, equatorial and inferior zone; the line dividing the equatorial from the inferior zone having various names at various times:

Line of demarcation of Barnes, 1847; Internal os of Braune, 1872; Ring of Bandl, 1876; Contraction ring of Schroeder, 1880.

The different degrees of placenta previa mentioned by the various authors, are numerous, but two will suffice: partial or marginal, and complete—*i. e.*, entirely over the internal os.

*Read before the Medical Society of the District of Columbia, November 23, 1904.

The varieties of hemorrhage to which the uterus is subject may be grouped in two classes: (1) *Accidental*, or a separation of the placenta from its normal situation, above the inferior zone; (2) *Unavoidable*, or placenta previa.

Authors differ as to the comparative frequency of partial and complete.

Pivard, in 1,500 labors, never met with one complete; *Trask*, 169 complete, 88 partial; *Mueller*, the majority were complete; *Read*, the majority were complete. *Mueller* gives 37 out of 56 in which the smaller lip was at the left of the uterus; thus the reason for using the right hand, going to the left.

How often do we encounter this trouble it is difficult to estimate. Some physicians meet them at short intervals, others very seldom. Upon inquiry among our local practitioners, I find that the average seems to be four.

My own experience is 1 in 300, counting partial as well as complete, the complete being 1 to 1,000 cases of labor. I believe that we often fail to diagnose placenta previa; we have a slight hemorrhage, make examination, fail to find traces of the hemorrhage; the labor continues, the parts are pressed on by the head, there is no more bleeding, and the case goes as accidental hemorrhage.

In the Boston Lying-in Hospital there were 28 cases of placenta previa, 6,700 labors, 1 to 239. *Edgar*, 1 to 250 (from statistics). In some years this condition is so frequent as almost to be epidemic. In 2,200 pregnancies I found the diagnosis of placenta previa in nine cases, or 1 in 224; one-third in primiparae; two-thirds in multiparae.

The cause is not known; there are numerous conjectures. The fact of more *placentae previae* occurring in multiparae than in primiparae has suggested one cause to be the enlarged, distorted, relaxed and malformed uterus. I have thought that the uterine cavity being somewhat open, and the ovum dropping down from abnormal pressure above, a slight contraction of the uterus as the ovum emerges from the mouth of the fallopian tube before the decidua reflexa forms around it might be a cause. This theory is plausible, the disease occurring most frequently in those whose work requires constant pressure of the abdominal muscles on the viscera and these on the fundus of the uterus. Of my cases, two were in hard-working women, the other led a rather easy life.

Webster says the anomaly is due to fertilization of the ovum as it is about to pass from the internal os, about ten days after menstruation; Hofmeier and Kaltenbach, to extension of the placenta on the decidua reflexa. This is an accepted theory by many obstetricians, among whom are Olshausen and Martin.

The opposers of this theory are Ahlfeld, Winckel, Berry Hart and Gottschalk, Gottschalk being in favor of the primary implantation of the ovum low down or even entirely over the os.

Kaltenbach holds that the small ovum would pass into the cervical canal and be lost.

Hart says that the hypertrophic and folded decidua will practically obliterate the *os uteri internum*, and implantation over it may thus occur. But why should such a low implantation occur? Hypothetically, the human ovum can graft only on a surface devoid of epithelium; it does not graft in the normal fallopian tubes, but in some part of the uterine cavity where the epithelium has been removed by menstruation. If, then, the ovum does not meet with the connective tissue surface until it has passed low down in the uterine cavity some form of placenta previa will occur.

Subinvolution, diseased uterine wall and a low down opening of the fallopian tubes are also named as causes.

Osiander believes that coition in the standing or sitting position is a potent cause. Stein, that the weight of the ovum causes it to descend. Mueller, that conception during menstruation, at or while the uterus has a vertical position, is a cause. Reamy, that sexual intercourse being deferred for fifteen or sixteen days after menstruation is a cause.

The *placenta* is generally malformed, irregular, thinner than usual and covers a larger surface than the normally situated placenta.

The *decidual* part is unevenly developed; being very thick above and thin below, the upper part is firmly attached, the lower part less so.

The insertion of the cord is also abnormal, not often found centrally attached, apt to be nearer one or the other side. Prolapse of the cord is therefore not uncommon.

The principal symptom, and the only one we are on the lookout for, is hemorrhage. It occurs without warning, varying from a small quantity to enough to deplete the system.

Usually several attacks are experienced, each successive one accompanied by more bleeding. Previous to the sixth or seventh month the hemorrhage is not dangerous; after this period the patient is never safe.

The more central the implantation the more severe the hemorrhage, the hemorrhage being uterine and not placental.

There is an apparent increase in hemorrhage during a pain, but it is not actually so; no more blood leaves the mother's system, only that which has already collected in the parts and is forced out by contraction.

The true cause of hemorrhage in placenta previa is not positively known, but the most satisfactory theory is that a contraction and retraction of the fibers of the uterus cause the placenta to be dragged from its position and the blood lost through the break of continuity.

If the placenta is normally placed (to the upper part of the uterus, where contraction alone occurs,) there would be no bleeding; but if placed low down (the lower down the more separation) we have both contraction and retraction.

Repeated hemorrhages during the latter part of pregnancy make the diagnosis of placenta previa almost certain, or at least a matter of grave concern, and arouse our suspicion of the existence of the disease.

If on digital examination the cervix is found enlarged in all directions, the vaginal vault soft and boggy, the presenting part not plainly felt, and on insinuating the index finger through the os there is found a soft, patulous, resisting mass, and through this mass the presenting part of the fetus, the diagnosis of placenta previa is made.

The difference between this resisting body and blood clot is that the blood clot is easily penetrated by the finger, but the placenta is penetrated with difficulty.

Some authors claim that under favorable conditions the placenta may be felt through the abdominal wall, but this way of diagnosis is very uncertain. I believe it cannot be done. If hemorrhage has already occurred perhaps it could, not from palpation, but from the loss of blood. If one had a hundred enceinte women at seven months, the keenest diagnostician could not tell placenta previa without bimanual examination.

Hemorrhage occurring during the first few months of preg-

nancy is not as a rule due to placenta previa, but to menstruation, laceration or abortion ; these hemorrhages are not very profuse except in the latter case, then it is sometimes *very* great, and with it, we have characteristic symptoms.

Dr. King considers the *prognosis* as *extremely grave* to the mother, *still more so* to the child.

In some of my cases the mothers have been very near the grave; the children all died.

Barnes, commenting on the idea of some that the life of the child is not to be considered says, in admitting frankly that it is our first duty to save the mother, "I insist on the correlative law, which does not permit us to sacrifice the child to this end, without conclusive proof that it is only at this price the mother can be saved."

According to Webster, the maternal death rate has been about 40 per cent., including deaths from sepsis ; but when cases are treated by men who understand aseptic methods, the mortality almost disappears. The examination, the manipulation and the means used for the arrest of hemorrhage may lead to infection, and, according to Kaltenbach, almost as many mothers die from sepsis and pyemia as from hemorrhage.

Maygries narrates four cases of fatal syncope in patients with placenta previa ; showing that severe hemorrhage from this anomaly can cause profound anemia, and death comes suddenly after its arrest.

The treatment is all-important. In looking up the various authorities, the keynote of all seems to tend in one direction, *prevent hemorrhage occurring at or after the seventh month ;* all agreeing that the uterus should be emptied as soon as possible, and that the case should be watched with the greatest care until the organ has completed its function, leaving the mother in a good condition. The ideas and means used to accomplish this end are numerous and various, yet all tend to the same result.

Grandin and Jarman say that "too much stress cannot be laid on the fact that hemorrhage occurring during the course of pregnancy should always be a matter of grave concern. Treatment should immediately be instituted to get rid of the fetus whenever hemorrhage occurs. If the hemorrhage occurs after the seventh month of gestation, even though it is not possible to feel the ab-

normal insertion of the placenta, the rule is to take steps to empty the uterus."

Webster maintains that "the first requisite is to check hemorrhage or the blood will run the patient to death; the more dilatation is accomplished the more we subject the patient to excessive hemorrhage. If tamponing is required the antiseptic gauze is best, kept in eight hours at a time, at the same time keeping a downward pressure on the fetus through the fundus of the uterus. If much bleeding, use saline injections and enemas."

Within the last few years Caesarean section has been done in several cases of placenta previa. It was first recommended by Lawson Tait, but this procedure has been severely criticized by many authorities.

Zinke holds that in central placenta previa, with the os closed, hemorrhage profuse and placenta separated around the os, the Caesarean section is legitimate.

Hirst's idea is not to interfere before the seventh month. (In 128 deaths in Mueller's statistics there was not one death before the seventh month.) After this period the mother may bleed to death at any time before medical aid can reach her. He directs that on reaching the bedside and finding placenta previa, the physician send for an assistant to administer an anesthetic; place the woman in the lithotomy position with her knees supported by nurses or attendants; cleanse both hands and arms thoroughly as for a surgical operation; wash out the vagina with tincture of green soap and hot water by means of pledgets of cotton; give a douche of bichloride of mercury 1 to 4,000; dilate the cervix by inserting one finger, then the second, next the thumb of the right hand; search on the woman's left side for the edge of the placenta; pass two fingers beyond the edge; perform bipolar version (assisted by the left hand externally); rupture the membranes; seize a foot and extract it until the knee appears at the vulva; then withdraw the anesthetic.

If bleeding has been alarming up to this time it will cease as soon as the child's breech is impacted in the pelvic canal. From time to time the protruding leg can be gently pulled upon to hasten the dilatation of the cervical canal, but plenty of time must be allowed for the dilatation, otherwise the head will be caught by the cervical fibers and the child be asphyxiated by the

pressure on the cord. At the expiration of an hour or so the child may be safely extracted.

Hirst goes on to say that if a physician discover placenta previa for the first time during labor, by the discharge of blood when the dilatation of the cervical canal begins, he should immediately pack the vagina as full as it can possibly be packed; the best material for this purpose being iodoform or sterilized gauze; or a clean towel torn in strips will answer, the tampon doubly acting to both control hemorrhage and assist the dilatation of the os.

After a delay of an hour or two, to allow time for the dilatation, the patient is anesthetized, and the operation proceeds as before described. If there is great difficulty in finding the margin of the placenta and membrane beyond it, too much time should not be lost in the search, the placenta should be perforated and the child's legs pulled through the perforation. If the operator distrust his ability to perform version as quickly as it should be done (for the hemorrhage is likely to be profuse during the attempt), he may adopt the plan of treatment proposed by Wiegand at the end of the 18th century, namely, to tampon the vagina, letting the tampon remain in place until the os is completely dilated; if dilatation is too long the tampon must be removed, the vagina douched and a fresh tampon inserted.

It is well to unite with the tampon treatment the procedure recommended by Barnes, *i. e.*, to separate the placenta by a sweep of the finger around and beyond the internal os. This plan was suggested by clinical observation that when the placenta separated and the presenting parts descended the hemorrhage ceased.

The combination of Barnes and Wiegand's treatment gives fairly good results so far as the mother is concerned, though increasing the risk of sepsis.

Dr. McBride (*South Carolina Monthly*, 1868), in presenting a report on placenta previa, relates the following case: A multipara, aged 24. Pregnant 270 days; nothing unusual during pregnancy. Pain came on at midnight, followed by severe flooding; the husband telephoned me that his wife was in labor. I reached her in a few moments; the flow had stopped; there was not much evidence of external flooding but vagina was filled with coagula, os slightly dilated, patulous and dilatable. He found the placenta attached completely, closing the os, the pain and

hemorrhage stopped. He called two physicians for consultation; both made same diagnosis, and advised to wait. He remained all night, a night of agony to him; remained until the afternoon of next day, left for a short time; during his absence she flooded very profusely. He tamponed, and remained through the next night; she had excellent pains and no flooding. At daybreak the pains stopped (here we often let the golden opportunity slip). He removed the tampon and applied a new one; the os was slightly dilated; patient became restless and nervous on recognizing her precarious condition. Up to this time (5 A. M.) she had been cheerful and bright. He gave ergot and stimulants, removed the tampon, introduced his hand, turned and delivered. He passed the right hand to left of uterus, past the placenta, breaking up all adhesions; the placenta very large. During all this time very little hemorrhage occurred. He grasped both feet of the fetus; delivered until the thighs engaged in the os; afterwards delivered head and placenta; there was some post partum hemorrhage, but it soon stopped; the uterus became firm and hard. The patient said that "she felt very well." About half an hour after delivery, she said she was too warm, and wanted to be fanned; her pulse showed evidence of approaching collapse; he gave stimulants and used all other means at hand, but to no avail; she died in three hours after delivery.

He admitted that he had made the mistake of not turning and delivering the first night. It was folly to temporize after the seventh month of placenta previa; *deliver immediately.*

A doctor who has not had a case of this fearful and frightful labor to deal with cannot fully appreciate the momentousness of the occasion, and need not be rash and speculative as to what he must do.

Any physician would say, in the case of such a death, that a combination of antepartum hemorrhage and shock were the cause; while this is true, the remote cause of death was antepartum homorrhage.

The only operation possible that offered any hope to the woman was version and delivery.

The younger members of the profession should, by all means, post themselves thoroughly and be ready for this awful emergency that may arise in practice at any time. Courage will be needed as well as thorough knowledge. "What to do, and how

to do it." Delay is fatal; regrets unpleasant. In a practice of thirteen years, this was the doctor's only case.

Winckel holds that a tampon can be applied so thoroughly that not a drop of blood can escape from the uterus. He leaves the tampon in place until the os is completely dilated, so that the head forms a tampon; or the hand can be introduced, the hips brought down and the child act as a tampon.

Barnes lets the tampon remain in one hour; Tarnier, 12 hours; Bailly, 24 hours.

The tampons or vaginal plugs, as Barnes denominates them, are treacherous aids, requiring the most vigorous watching; the plug introduced with so much pain to the patient soon becomes compressed, blood runs past it or accumulates above or around it, and the tide of life ebbs away unsuspected.

We should never leave a patient with a vaginal tampon; feel her pulse frequently, watch her face closely, and examine to see if any blood is oozing externally.

The writer on placenta previa in the *American Text-book of Obstetrics* thinks Caesarean section is not to be seriously considered except under the following conditions:

1st. When the os is undilated; 2d. When the hemorrhage is uncontrolled by the tampon; 3d. When the child is at term and living; and, 4th. When the patient is uninfected and not moribund from loss of blood, and her environments such as to favor a rigid aseptic operation.

Caesarean section is not generally advocated, for out of 50 cases of complete placenta previa (Schauta's clinic) not more than eighteen (18) went to full term; and the life of the child, under such circumstances, is in the greatest jeopardy by any means of delivery. The natural mortality of placenta previa since the era of clean obstetrics is not greater than from 5 to 10 per cent.

Zinke has collected eight cases of Caesarean section for placenta previa; three mothers died, 37½ per cent., and two children, 25 per cent. The future will probably reveal the fact that the operation can never be generally adopted; that it offers in some cases better chances for saving the child, but adds risk to the mother; and that it shall be elective only by the judgment of one skilled in obstetrics and abdominal surgery.

The same author agrees with the procedure of Dr. McBride in

treating placenta previa, with the exception of going through the placenta when the edge is hard to reach.

The abnormally situated placenta is a very grave condition. We all concede the danger attending it, and, above all, our inability, in certain severe cases, to effectually treat it. My own experience, in over twenty years, has been, among numerous normal labors, to meet three cases of placenta previa. Of these cases, all have lived, but the last came very near being exsanguinated. The fact of this case being so bad caused me to look for different means to check hemorrhage and deliver the child. If I had used only the means laid down in text-books, effectual treatment would have been lacking and my patient would have died.

I recall a case of accidental uterine hemorrhage (not placenta previa) occurring about three years ago in the practice of a prominent physician in this city, where labor had come on during the night, at which time profuse hemorrhage had occurred. He sent for me to aid him; when I reached the bedside of the patient all hemorrhage had ceased, but she was very anemic. The child and placenta were delivered.

The physician told me his patient had flooded considerably for a short time; that the child came normally, as did the placenta, but he needed assistance to inject the saline solution, strychnine, ergot and hot water. This treatment was carried out completely and to the entire satisfaction of both, lasting from the time of my arrival (4 A. M.) until (7) A. M.

The doctor requested me to return at midday; I reached the house about this time and found the patient had just died. What did she die of? Did we give her the best treatment?

Of three cases of placenta previa it was my fortune to attend, two were in the winter of 1900, the third in 1904. The cases in 1900 were much alike, except that in one the placenta was more centrally placed, and the hemorrhage much more profuse. The third case will be fully dealt with later on.

The treatment of both the 1900 cases was heroic from the beginning. When I found that Case No. 1 was a placenta previa, a consulting physician was immediately called; we determined to extract the fetus, losing sight of the child's life, thinking alone of the mother's.

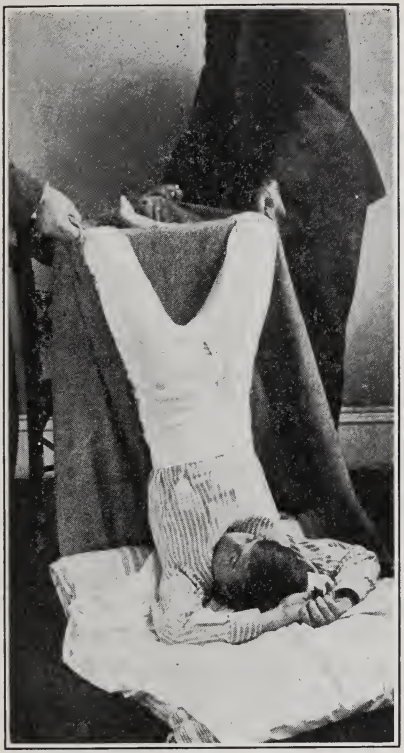
She was 35 years old; white; a multigravida; in poor circum-

stances and environments. Chloroform was administered; no douches were used before delivery; I dilated the cervix with my forefinger; then the second, and finally the whole hand was passed through the os; the placenta penetrated, version performed, the child brought down and delivered; no after douche, no saline injection, but the patient almost died; in fact, we thought she was dead. She made, however, a good recovery; though the child was born dead.

In less than ten days, a very similar condition, in another patient, confronted me; I did not wait for severe hemorrhage to exsanguinate, but used similar means to bring about delivery; this patient also made a good recovery.

The third case and its treatment, particularly the new position, which I call to your attention, was in a primigravida; age 24; white; the labor started before the regular time, between eight and nine months; she had not engaged any physician, but a nurse was in attendance. The hemorrhage was profuse.

She told the patient that it was all right for the blood to come, but the latter became alarmed at the hemorrhage, and I was sent for. I responded immediately, found the patient flooding profusely, made the diagnosis of placenta previa, the os the size of a ten cent piece, soft and dilatable; I warned her of the danger, telling her heroic means had to be used to save her life. The foot of the bed was raised and dilatation tried; hemorrhage very profuse; had not time to get another physician; could hardly collect my own thoughts other than to stop the hemorrhage to give me time to procure assistance. It occurred to me to put the patient on her



head, but the question was how to keep her there afterward; but I thought I could place her in a permanent position with her head down.

The illustrations will give a better idea than a long description of the position I secured for the operation.

Two chairs are placed seat to seat at the end of a bed made on the floor; a stout blanket and sheet cover them. The patient is placed on the floor-bed and drawn up to position one (1), an exaggerated Trendelenburg position, and kept there until the two assistants are in position, one on each side, ready to hold the blanket as it is pulled tightly over the uprights of the reversed chair; the patient is then lifted to the perpendicular position, her bent legs placed in the sling made by the uprights and hands of the assistants holding the blanket as in cut two (2); cut three (3) shows the side view of the same position.

The mode of operating was to dilate the vulva and vagina with

coned fingers, finally the hand, then the os by insinuating index, second, third, coned fingers and hand, directing the fingers to the left, separating the placenta. As progress was made, I grasped a foot and at the same time, by external manipulation, pushed the head in the opposite direction (a very simple procedure, as the head by gravity readily falls to the desired position) ; delivered the foot, thighs, body, then the head ; the placenta followed in a short time by compression.

No anesthetic was used ; I had no trouble to dilate the parts nor get contraction after delivery.

The hemorrhage seemed to stop as soon as the perpendicular position was reached. The exaggerated Trendelenburg, then the Trendelenburg position, and after four days the horizontal position; fourteen days *out of bed* and a good recovery.

This perpendicular position can be used also in accidental hemorrhage, early detached placenta, *post partum* hemorrhage of normal labor and for replacing prolapsed funis.

A few suggestions as deductions :

First. When we are positive that placenta previa is present, we should make all preparations to deliver the child ; when severe hemorrhage occurs after the seventh month we should not leave our patient until she is delivered.

Second. We should tampon the vagina immediately if hemorrhage be present, while preparing for delivery in the position recommended in this paper ; dilate, turn and deliver ; we should not remove the clots found in the vagina, but tampon while they are present.

Third. We should not think about Caesarean section unless the life of the child is of greater value than that of the mother.

Fourth. We should have an assistant ready to compress the aorta, also a hypodermic syringe, with strychnine, saline solution, ergot, quinine, milk and coffee.

Fifth. We should have everything scrupulously clean and antiseptic, especially our hands and arms.

Sixth. We should watch the patient's lips and not let them get white ; keep the blood in the head.

Seventh. If the uterus needs washing out after delivery, use boracic acid solution at 110 degrees.

Eighth. This position will not give the blood to the heart, but

a Martin bandage will, if applied to the lower extremity as for amputation.

Ninth. After delivery the patient is placed in the horizontal position slowly; defecation should be deferred for four days, and the urine drawn by catheter.

Tenth. We should use broths in full quantities, filling the blood vessels, because death results from hemorrhage which cuts off the blood supply from the nerve centers more than from shock.

Eleventh. I believe that if the above suggestions are carried out and the perpendicular position used the mortality will be reduced to a minimum. A trial will do no harm.

Dr. A. F. A. King commended the paper and saw nothing in it to criticize. He did not understand, though, how the position described by the essayist differed from the ordinary Trendelenburg position; the result in both was to lower the head and raise the body, so that the blood would gravitate to the cerebral centers. As to the three segments of the uterus, the lowest of the three was the "danger zone." In the middle zone, where the diameter was the same as that of the fetal head, there was no danger of separation of the placenta during labor; nor was there any in the upper region, where the uterus contracted and became smaller during labor; but in the lower segment, the diameter of which was *less* than that of the fetal head, and it must therefore *dilate* in order to allow the head to pass, separation of the placenta and hemorrhage become inevitable. The cause of placenta previa was undoubtedly to be found, in many cases, in displacement of the ovum, which, being originally implanted in the upper part of the uterus, for one reason or another fell down and re-attached itself to the decidua lower down, hence the development of the placenta in an abnormally low position.

Dr. Henry D. Fry said that, as regarded position, any severe hemorrhage was best treated by lowering the head and elevating the feet, and all would give due credit to Dr. Thompson for the arrangement which he had suggested. When this was said, however, all had been said that could, to commend the suggestion. The maternal mortality in placenta previa was formerly very high—30 to 40 per cent.; now it was 5 per cent., or less. Dr. Fry had recently collected histories of seventy cases with only one death. It was well to recall the main reasons for this reduction in mortality. 1. The introduction of aseptic methods. 2. Greater skill in controlling postpartum hemorrhage. 3. A greater ability to recognize the existence of placenta previa, and instituting treatment by turning and dilating the os to a size which would admit one finger—this degree of dilatation being all that was necessary in the vast majority of cases. 4. Slow delivery. Rapid

extraction tended to kill the mother by laceration, secondary hemorrhage, infection, phlebitis, etc. If treatment based upon these principles was followed it would not be found necessary to stand the patient on her head, or to resort to other extraordinary methods which tended to lead the practitioner from the main road, and caused him to hesitate in the performance of his duty, to the detriment of his patient. In a desperate case, however, Dr. Thompson's device would undoubtedly prove of value.

A positive diagnosis was the point of greatest importance. To this end the patient should be examined under an anesthetic. Introduce the hand into the vagina, and the finger into the uterus, so as to feel the placenta if possible. This should be done in every case in which there was uterine hemorrhage in the later months of pregnancy. Recognizing the existence of placenta previa, proceed to deliver the fetus. Do not treat by tampon unless necessary as a temporary measure, as, for instance, while the woman was being removed to a hospital.

As regarded Caesarean section, the mortality was high, but not nearly as high at the present time as Dr. Thompson stated. Formerly the mortality was great because the patients were in a desperate condition when the operation was performed. That there was a clearly limited and well-defined field for this operation in placenta previa was beyond question. Dr. Fry had already reported one case in point to the Society. A mortality of 5 per cent. in women in comparatively good condition was now considered high. In primiparae, with *placenta previa centralis*, and an undilated and undilatable cervix, the mortality by ordinary methods varied from 10 to 15 per cent.; by Caesarean section, only 5 per cent. In conclusion, Dr. Fry said that it was his purpose to emphasize the brilliant results obtained by recent methods, and the fact that if these methods were followed there would be no need to resort to any device of an extraordinary nature.

Dr. Anderson commended the paper. He was much interested in the subject of posture as a means of combating hemorrhage, and had used a method which had not been described, namely, flexing the body of the patient forward upon the pelvis, building up from beneath with pillows, and introducing a pad in the flexure. The bleeding vessel was thus compressed. He had first used the method, successfully, in the hemorrhage of typhoid, after the usual methods had failed. Subsequently he employed it with good result in the case of a woman who was bleeding internally, presumably on account of the rupture of the sac in ectopic pregnancy. He believed that the method would prove equally useful in placenta previa and *postpartum* hemorrhage. In addition to tending to check the bleeding, it drove the blood from the abdomen, where it was not especially needed, to the head and extremities.

Dr. Chappell agreed with Dr. Fry that if all cases of placenta

previa could be treated by ideal modern methods, there would be no need to resort to such an extraordinary measure as that of standing the patient on her head. But the physician could not always choose his patients or appoint the time or regulate the circumstances of his attendance, so as to make it possible to treat the placenta previa at well appointed hospitals by ideal modern methods. In practice he might encounter almost any condition without warning, and under trying circumstances he was fortunate to have at hand some homely, if effective, method of controlling hemorrhage particularly in placenta previa. Among the well-to-do, the physician usually was called upon to attend the patient from the beginning of her pregnancy; and under such circumstances he might discover the trouble in time; but, among the poor, the physician was more liable to be called in when the patient was *in extremis*. Hence, he needed to have all his wits about him, and a device such as that suggested by Dr. Thompson might prove of inestimable value. Dr. Chappell therefore thought the essayist was entitled to credit for his suggestion, which appeared to be a good one.

Dr. Thompson, in closing the discussion, further explained the working of his device, and that he had not attempted to introduce any new principle, since lowering the head in severe hemorrhage was an accepted method. His object had been to suggest a device to save life from uterine hemorrhage. The apparatus was at hand in every household, and the method was particularly suited to patients *in extremis*, where there was no time or opportunity for the use of the ideal modern methods of treatment.

POST-OPERATIVE INTESTINAL OBSTRUCTION.*

By JAMES F. MITCHELL, M. D.,

Washington, D. C.

The subject of appendicitis has been so frequently and widely discussed that one feels that an apology is due for again bringing it up. The occurrence of two intestinal obstructions following operation in a series of 36 cases operated upon in the last two years leads me to believe that the importance of this complication warrants further consideration. The evident cause of one and the obscure nature of the other case have brought up the question as to the influence of drainage in the production of the condition. The fact that in both cases obstruction has followed appendicitis with abscess has created a desire to determine if possible the re-

* Read before the Medical Society of the District of Columbia, January 25, 1905.

lation of intestinal obstruction to the different forms of appendicitis. The successful termination of these two cases without operative interference has led me to enquire into the results of other surgeons.

Every surgeon dealing with any number of cases of appendicitis has at some time to face that most appalling condition, post-operative intestinal obstruction, and to decide the important question as to whether or not operative interference is advisable. In the late obstructions due to bands or old adhesions, the question is not difficult, and, provided operation is not too long postponed, the outlook is bright. There is another class, however, where the obstruction occurs in the first few days after operation, when a second surgical interference is a very serious procedure and the results are conspicuously disastrous. The second operation may be short and simple, and the obstruction readily found and relieved, and yet the patient will die just as our hopes are raised by the correction of the offending kink or adhesion. It is this class we propose to discuss; the frequency with which obstruction occurs, its causes and mechanism, the symptoms by which it can be recognized, the measures we can adopt at the time of the primary operation to lessen the chances of obstruction, and its treatment when present. Unrecognized and untreated, the condition must inevitably prove fatal. Undoubtedly many of these cases go on record as deaths from peritonitis.

Exact statistics are difficult to obtain from the literature, and I have not been able to find any figures showing the relative frequency with which obstruction occurs after operation in the various forms of appendicitis. Undoubtedly the ratio varies with the operator and his technique.

McWilliams (1) reports 86 cases of obstruction following operation for appendicitis, collected from private sources and from a review of the literature, and he emphasizes the importance of careful post-operative treatment. He divides the cases into three classes: (1) Immediate, (2) Early, and (3) Late. The first group comprises those cases in which obstruction comes on immediately after the operation, from a few hours to a couple of days. The second class includes those occurring a number of days or weeks after the primary operation, before convalescence from this is complete, usually before the complete healing of the wound. The third main class comprises those cases which may

come on weeks, months or years after the primary operation or after an appendicitis which has not even been operated upon. Five of McWilliams' 86 cases had second attacks after the operative relief of the first. All those in which the location is named occurred in the small intestine. There were nine cases where there had been no previous primary appendix operation, and eight followed interval operations. Sixty-nine, or 81 per cent. followed appendicitis with abscess. Six of 54 cases occurred in the first week after operation.

The following analysis is taken from the service of Professor Halsted, at the Johns Hopkins Hospital. There were 907 cases of appendicitis of all varieties—414 chronic, and 493 acute. Of the chronic cases, only six operations were followed by symptoms of intestinal obstruction. There was one immediate obstruction relieved by the removal of gauze packing ; two instances of early indefinite symptoms, and three late obstructions, at 40 days, seventeen months and four years after operation respectively. The most liberal estimate would then predict about one and five-tenths per cent. of obstructions after operation in chronic appendicitis. In the 493 acute cases, obstruction occurred 30 times, 6.1 per cent. The difference is more noticeable when we consider the acute cases in groups: (1) acute—139 cases; (2) acute with abscess or localized peritonitis—277 cases ; (3) acute with more or less general peritonitis—77 cases. In group 1 there were three obstructions—2.2 per cent.; in group 2, eighteen obstructions—6.5 per cent.; and in group 3, nine obstructions, 11.7 per cent. This series, with that of McWilliams, shows very plainly that while obstruction occurs after unoperated appendicitis, and while it is met with occasionally after operations done in the intervals or early in the acute attack, the proportion rises rapidly in cases which have gone on to peritonitis or abscess formation. In the 907 cases there were 36 obstructions, or a little over three in every hundred; while in the abscess cases the proportion reaches 6.5 per cent., and in general peritonitis 11.7 per cent. Drainage and all other factors considered, this shows a very definite relation between the extent of peritonitis and the chances in favor of obstruction. One-half of all the cases followed appendicitis with abscess, and more than half of these were instances of immediate obstruction.

907 Operated Cases of Appendicitis.

Chronic. 414 cases, 6 obstructions = 1.5 per cent.	Acute. 493 cases, 30 obstructions, = 6.1 per cent.		
	Acute, 139.	Acute with ab. 277.	Acute with gnl. per. 79.
	Obstruction	after operation.	
6 = 1.5 per cent. 1 immediately. 2 early. 3 late.	3 = 2.2 per cent. 1 immediately. 1 early. 1 late.	18 = 6.5 per cent. 10 immediately. 4 early. 4 late. 50 per cent. of all obstructions.	9 = 11.7 per cent. 5 immediately. 2 early. 2 late.

The cause of immediate obstruction is in many cases intestinal paralysis solely due to peritonitis. Again, the pressure of an abscess may cause the obstruction, or the relief of this pressure may have allowed a coil of intestine to fall into such a position that its lumen is obstructed by a kink, or by the traction of a pre-existing adhesion. Recent adhesions may hold a loop in such a position as to interfere with fecal circulation. The obstruction may be complete or only partial. The fixation of one side of the intestinal wall is enough to produce the symptoms of obstruction. Adhesions about an abscess can readily cause such fixation, and a slight change of position at the operation may be all that is necessary to complete the obstruction. Gauze drainage certainly is responsible for some cases. The following is an instance: In May last I operated upon a young girl in the third week of her first attack of appendicitis with all the signs of an abscess. On opening into the abscess cavity, a gangrenous appendix was found, passing beneath the ileum close to the caecum, and thus forming an "hour-glass" abscess, walled off by adhesions, and with its narrow neck lying beneath the ileum. It was necessary to drain the median part of the abscess cavity by passing a strip of gauze beneath the ileum through a narrow opening. Obstruction could be predicted. Twenty-four hours later the signs were unmistakable; there was nausea and vomiting, and abdominal distention. On the surface of the abdomen could be seen the typical ladder patterns of small intestine in active peristalsis. The gauze drain was withdrawn from beneath the ileum, the stomach was washed out, an enema of turpentine and soap suds given, and the condition rapidly disappeared.

I believe, however, that gauze drainage has been unduly blamed and its influence as an obstructive factor exaggerated. Hotchkiss (2), who has been an earnest advocate of the cigarette drain as a substitute for more extensive drainage, in a recent paper states that, "While it had formerly been my belief that most of these cases are caused by wide gauze packing between intestinal coils; I am forced to the conclusion that the condition perhaps quite often occurs in cases where no gauze drainage has been employed, and is due then rather to the extent, character and intensity of the original peritonitis."

On opening the abdomen, one is often impressed by the apparently trivial nature of the obstructing lesion. If paralysis alone is responsible, a generally distended small intestine will be found, the pre-existing peritonitis having subsided. If, in addition to the paralysis, there are adhesions, the picture may vary. It is most striking to observe what delicate adhesions will hold the intestinal coils together in these very early cases. There may be a single adhesion which has caused the trouble by retaining the bowel in a kinked position, although its lumen is not entirely occluded. Mere adhesion of the small intestine over a limited area offers an impediment to the passage of intestinal contents—a piece of drainage gauze may thus be responsible. The further mechanism is then simple. Increased distention, with gas higher up, causes increased pressure at the point of resistance, and this increased pressure serves to exaggerate the obstruction until finally a complete stoppage is produced. If by any means any gas is enabled to pass the constriction, the pressure is lessened and the obstruction relieved for the time. Thus we can understand why a simple enterostomy is so valuable as an operative procedure in these cases. On the other hand, the pressure remaining unrelieved holds the bowel in its new position, and fresh adhesions may so fix it there as to render its relief by other than surgical interference impossible. In such an immediate obstruction, the difference between the bowel above and below the obstructed point is marked. Above, it is distended, its blood vessels prominent, and its walls often remarkably thin. There has not been time for the hypertrophy, which is so characteristic in chronic obstruction. The distention may be so great as to have caused paralysis, so that peristaltic movements are not observed. Below, the bowel is more pale; it is collapsed, and peristaltic

movements may be active. Its appearance is rapidly approaching that of the "starvation intestine."

The clinical picture in these cases is usually quite different from that presented by the early or late ones, for in those latter we have an acute onset in a patient who has recovered from the previous operative shock. In the immediate obstruction the post-operative nausea may simply continue into the nausea and vomiting of obstruction, and the increase in distention may be so gradual from that which already exists as to escape notice. For this reason it is of the utmost importance to watch the patient most closely. All the signs and symptoms may be merely an exaggeration of those already present. In other cases, however, the onset may be sudden, as in an acute late obstruction—the picture so well described by Treves (3) as "peritonism"—intense abdominal pain, collapse and vomiting, followed by constipation, incessant vomiting and distention. "The final symptoms which precede death are not so much those due directly to occlusion of the lumen of the bowel as those depending upon septic infection of the whole body from a disordered intestine. The subjects of acute intestinal obstruction die for the most part with the phenomena of septic poisoning, and if a certain stage has been passed the mere relieving of the obstruction does not save life." (Treves.) The pinched, anxious expression is striking. Hiccough may be a prominent symptom. Vomiting is usually pronounced, the vomitus soon becoming bile-stained and later fecal, depending on the seat of obstruction. The vomiting is projectile, the patient without effort or retching pouring out enormous amounts of fluid. Constipation may be absolute, or flatus may be occasionally passed. There may be frequent small fluid movements where obstruction is by a later exploration shown to have been present. Distention depends partly on the seat of the obstruction and may be local or general. Sometimes it may assume the appearance of a local tumor. Visible peristalsis when present is an absolute sign. Pain is paroxysmal and severe, often causing the patient to cry out. If the abdomen is carefully observed in a good light the ladder patterns of small intestines in peristalsis may be seen during the paroxysm. Tenderness and rigidity are not great. Leucocytosis may be an important sign in the early stages. A high leucocyte count is the rule, and a rising leucocytosis in a suspicious case should not be disregarded. Bloodgood (4) regards "a rise in the

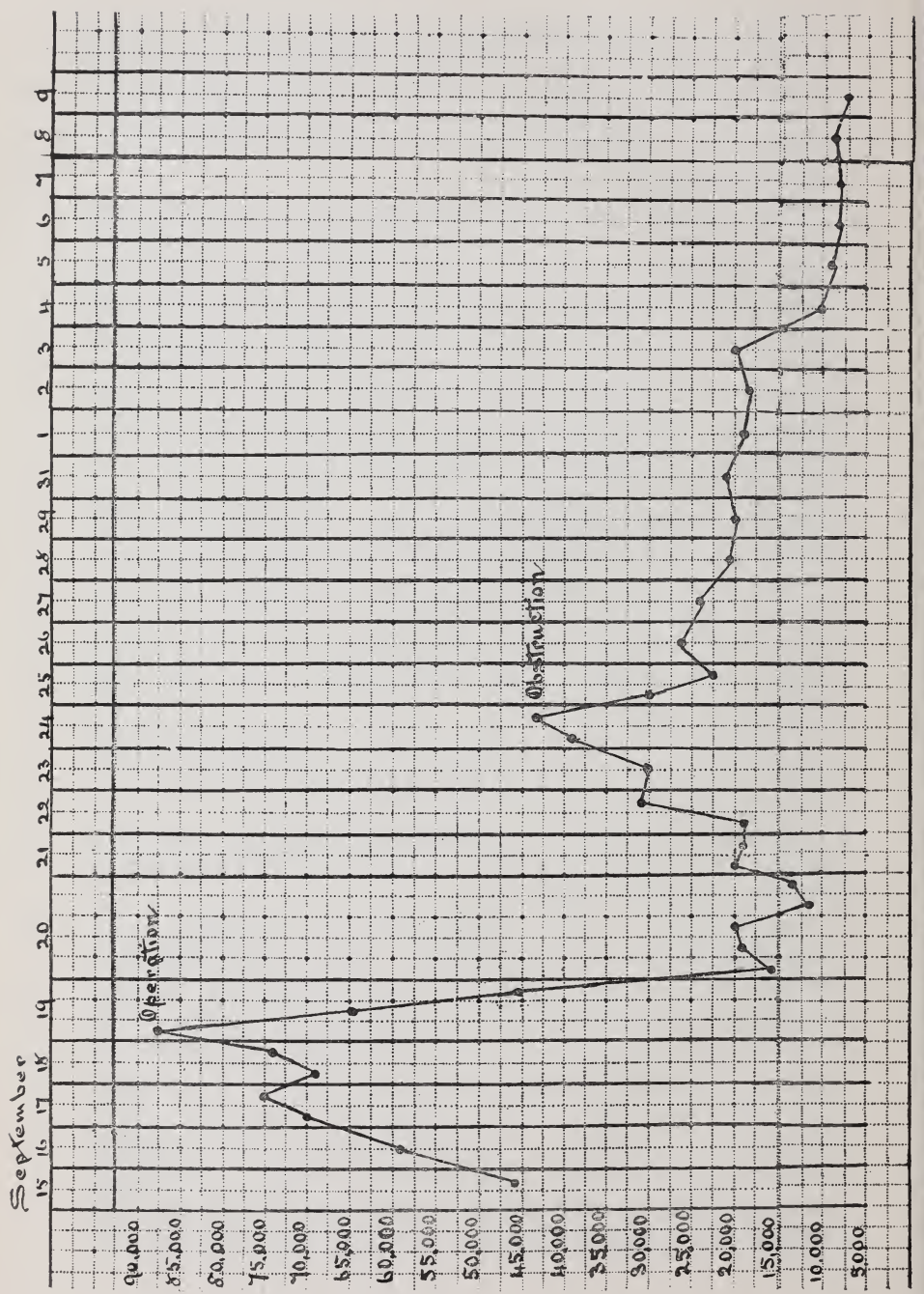
leucocyte count as probably one of the most important early signs of intestinal obstruction," and says: "In all of our observations on post-operative obstruction, as well as primary intestinal obstruction, there has been leucocytosis varying from fifteen thousand to thirty thousand, and in one of my observations it was the only positive sign."

The following case (5) is an illustration of the rise in leucocytes with obstruction, and their fall with its relief. In September, 1900, we operated upon a patient for a liver abscess, occurring in the course of undoubted typhoid fever. The man had had frequent hemorrhages from the bowels, and his condition at the time of operation was critical. The leucocytes were 87,000, haemoglobin 52 per cent., and the red blood corpuscles 3,700,000. A large abscess of the liver was drained anteriorly and posteriorly through the abdomen, necessitating extensive gauze packing. After operation the leucocytes dropped to 12,000. Two days later there were symptoms of intestinal obstruction. The leucocytes rose rapidly to 43,000. The patient's general condition was such as to absolutely contra-indicate operation. The gauze packing was removed, and turpentine administered by mouth, stupes and enemata. The obstruction was relieved, and with its relief the leucocytes again dropped. The accompanying chart shows the leucocytic rise and fall.

The presence of indican in the urine has been considered of diagnostic importance; but it occurs with so many different intra-abdominal conditions that it is of little value.

The condition most apt to be mistaken for obstruction is peritonitis. The two may co-exist, and their diagnostic separation is a matter of great difficulty.

The treatment of this condition may be considered in two stages—prophylactic and immediate. By care and certain precautions at the original operation and by intelligent post-operative treatment we can certainly lessen materially the chances of obstruction. Its possibility in particular cases should always be borne in mind by the operator, and the various steps of the operation carried out with this ever before him. Let him not be tempted to do too much. The resisting power of the peritoneum to infection is marvelous. Hotchkiss has well said: "We should feel that in removing the diseased appendix we have removed the principal bar to recovery, and we are driven to rely upon the nor-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Operation
Obstruction

mal physiological power of the peritoneum to extricate us from our difficulty." Evisceration is to be strictly avoided. We should inflict as little traumatism as possible on the already burdened peritoneum.

There has been a great deal of dispute and extensive literature on the question of drainage. Unquestionably gauze drainage between intestinal coils is dangerous, and wicks of gauze wrapped in rubber tissue have been advocated by Hotchkiss, Blake and others to drain the principal focus of infection. We question, however, the greater danger of more abundant gauze packing intelligently placed in an abscess cavity. Care should be taken not to compress the intestine nor to fix a coil in a bent or twisted position. The omentum is valuable as a partial substitute for protective gauze. The packing should present an even surface to the intestinal coils, and should not extend in strips between coils, nor should gaps be left, into which a knuckle of bowel could squeeze. Local conditions may be such as to necessitate a departure from this rule, and in such instances we can often rightly predict obstruction.

Conscientious stomach washing before the patient leaves the table will in a great majority of cases do away with or reduce to a minimum post-anesthetic nausea and vomiting. In all drained cases the administration of a purgative through the stomach tube should be added. This procedure is of the greatest value. Epsom salt may be used, but castor oil in large doses is to be preferred. Ordinarily about four ounces are given, but we have often used as much as eight or ten ounces, and have seen the bowels moved in four or five hours where there was enormous distention and there had been no movement for three or four days before the operation. The peristalsis thus secured while adhesions are fresh must do much to diminish the possibility of a loop of intestine being held in a kinked or twisted position.

The person in charge of the patient for the first few days after the operation really has more responsibility than the operator himself. Careful watching and intelligent after-treatment may not only prevent obstruction, but will often do away with the necessity of a dangerous operation, by meeting its very earliest indications with proper treatment. Every effort should be made to secure the passage of gas, or a movement of the bowels, in the first twenty-four hours, and after this the bowels should be kept

open by frequent doses of calomel or by a daily enema. Each day that is thus passed without distention, and with peristalsis maintained, decreases the probability of obstruction. Adhesions are at this time delicate, and we can readily see how peristaltic motion of the small intestine can prevent its coils from being fixed in abnormal positions. The remarkable absorption of adhesions is well known to every surgeon, and our aim should be to carry our patient as safely as possible through this early danger period until the adhesions are absorbed by natural processes. Turpentine stupes will do much in ordinary distention and should be assisted by enemata of soapsuds with turpentine, ox gall, alum, or asafoetida. One should bear in mind the uselessness of attempts to pass the high rectal tube with a distended abdomen. Nausea permitting, a few drops of turpentine by mouth will often be of benefit, or minute hypodermics of atropine may be given. If the nausea and vomiting are troublesome, repeated gastric lavage is most comforting to the patient. After the washing, Epsom salt or castor oil may be introduced through the tube and will usually be retained. Frequent leucocyte counts should be made as a control. Rectal feeding should be the rule until the bowels have moved, and the diet should be carefully restricted for the first few weeks after operation. Morphia is absolutely contraindicated. Its use not only favors the production of obstruction, but will mask its early signs and thus delay the diagnosis. Codeia by rectum is a very good substitute.

If in spite of all precautions and care the signs of obstruction appear in the first day or two, what are we to do? Certainly this is the most dangerous time for a second operative interference and the mortality is frightfully high. Many of the obstructions are slight and will yield to palliative measures. Again, the general condition may be such as to absolutely forbid operative interference. Removal of gauze drainage, change of position, turpentine stupes, enemata and gastric lavage, with the administration of Epsom salt or castor oil, may then be tried. We had recently such a case operated upon for extensive peritonitis from a ruptured appendix abscess. Obstruction developed within forty-eight hours. There was distention, incessant vomiting, paroxysmal pain and visible peristalsis. Removal of the gauze drainage gave no relief. Turpentine stupes lessened the pain, and finally the passage of a large amount of gas followed repeated

turpentine enemata. The stomach was washed out and castor oil administered through the tube. The bowels moved the next day and complete recovery followed.

If the obstruction is definite and does not yield rapidly to such palliative measures they should not be persisted in too long, for valuable time may thus be lost. Operation is then the only chance, and the earlier the interference the better the outlook. If in doubt, it is certainly better to operate than to wait until fecal vomiting makes the diagnosis clear and the prognosis poor. The operation should be as short and as rapidly executed as possible and only necessary traumatism inflicted. Results show that the simplest procedure gives the best prognosis, and certainly in extreme cases a simple enterostomy seems to offer the greatest chance of success. This can be done under local anesthesia, selecting the first distended coil of small intestine that presents and establishing a fecal fistula. If a general anesthetic is used, all preparations should be completed and everything ready for the incision before administering the anesthetic. The period of anesthesia should be as short as possible, and every possible precaution against shock should be taken. Follis (6) reports in detail two interesting cases of obstruction treated by enterostomy. In the first case there were two obstructions, one two days after operation, the other about three weeks. In each instance a fecal fistula was established in the small intestine with relief of the obstruction. The two fistulas eventually healed without further trouble. In the second case the obstruction was suspected at operation. A coil of intestine was therefore left in the wound and in twenty-four hours it was opened on account of persistence of obstructive symptoms. The obstruction was here likewise relieved and the fistula healed of itself.

This procedure has many advantages. In some instances it permanently relieves the obstruction and the fistula closes. Should the fistula remain open owing to persistence of the obstruction a second operation can then be done at a more favorable time. This fistula provides for the immediate escape from the intestine of gas and feces to the retention of which the septic condition of the patient is due.

For the details of the more extensive operation—laparotomy and search for the point of obstruction—we can best refer to the excellent papers of Hotchkiss and McWilliams.

The results in the seventeen immediate obstructions in the Hopkins series are interesting. There were eight deaths and nine recoveries. Nine cases were operated upon with six deaths and three recoveries. Eight were treated by palliative measures with two deaths and six recoveries. These figures would be misleading without further explanation. Of the six operative deaths, three were in cases of general peritonitis, and in another the obstruction was present at the time of the first operation. Both palliative cases ending in death had general peritonitis at the operation. Of the three operative recoveries one had obstruction present at the first operation, and in the other two simple enterostomy was done without any previous exploration of the abdomen. It must also be remembered that many of the unoperated cases are of a milder type and that in the cases operated upon palliative treatment has usually been tried and has failed. It is also evident that obstruction following general peritonitis is the most serious type.

RESULT OF SEVENTEEN IMMEDIATE OBSTRUCTIONS.

Deaths, 8. Recoveries, 9.

Operated, 9 : Deaths, 6, (3 general peritonitis, 2 obstruction at first operation).
Recoveries, 3.

Unoperated, 8 : Deaths, 2 (both general peritonitis).
Recoveries, 6.

In conclusion it seems that :

(1) Obstruction of the intestine is possible after any form of appendicitis, operated or unoperated.

(2) It is most frequent after appendicitis with abscess or peritonitis, and usually occurs in the small intestine.

(3) The obstruction may occur immediately after operation, or weeks, months or years later.

(4) The prognosis is least favorable in the immediate obstructions.

(5) Much can be accomplished by prophylaxis at the primary operation and by intelligent post-operative treatment.

(6) The obstruction varies in intensity. Many cases can be relieved by palliative measures. Operation should not on this account be delayed, and the operative procedure should be as simple and as rapidly executed as possible.

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Dr. J. Ford Thompson said that the paper was both interesting and timely. The literature upon the subject was very limited. The consideration of the subject carried him back in memory many years. He was both glad and proud that it had been given him to see the beginning and development of most abdominal surgery. In his early days there were no operations upon the appendix, the gall-bladder, pus-tubes, etc. The results obtained by these three operations alone would redound to the credit of surgery forever. He had noted the development of abdominal surgery up to the present time, and in the hands of a skilled operator the technique was almost perfect. He doubted whether any better results would be obtained twenty years hence than were obtained by the skilled surgeon of today.

While there could be no question as to the difference between the results obtained by skilled and unskilled operators, there was, nevertheless, a certain mortality which fell to the lot of every surgeon, no matter how careful he might be. The element of chance was always present to a certain degree, and circumstances would occasionally arise which were both unforeseen and unavoidable. Hence there would always be some mortality connected with these operations. It had been his good fortune, however, to encounter very few post-operative accidents; he could not recollect an instance of post-operative intestinal obstruction. In a recent case the packing in the wound gave much trouble, and it was necessary subsequently to remove it, but there were no symptoms of obstruction.

There was a great difference of opinion as to the best method of treating the patient before operation, the subsequent treatment of the wound, the matter of drainage, etc. Formerly it was thought necessary in these abdominal cases to keep the patient almost comatose by the use of opiates. Then came the purgative treatment, using magnesium sulphate, etc. Recently, the starvation treatment (Ochsner) seemed to have come to the front. As a matter of fact, all these different methods of treatment were about on a level as regarded efficacy, and in the end it came down to a man's *judgment* in each individual case, the judgment being, to a certain extent, the measure of his experience. No rule or

law could be laid down to guide the judgment any more than rules could be formulated in advance to guide the movements of a general who had to meet the varying conditions incident to warfare. It was the judgment of the operator at the time—his ability to meet whatever might turn up unexpectedly—that influenced the result in many cases. Different operators met such conditions differently; but if the judgment were good the results would be equally satisfactory. He had used much packing in abdominal wounds, also little packing, and in some cases none at all, and yet the result, so far as intestinal obstruction was concerned, had been as he had stated. He had seen yards and yards of gauze packed into a wound, and naturally expected that intestinal obstruction would result; but nothing of the kind occurred. Nevertheless, such a large quantity of packing material was in almost all cases entirely unnecessary. Did the packing ever actually cause post-operative intestinal obstruction? He had never known it to do so; but even if it did, the operator must use his best judgment at the time of operation; if, in his judgment, an unusual quantity of packing was necessary, he must use it.

Dr. Thompson commended lavage after operation; he had seen nothing but good results from its use. The administration of Epsom salt or castor oil through the tube was also a useful measure, inasmuch as paralysis of the muscular coat of the bowel would not occur if we could secure an early movement. But should we use this measure in every case? Was it capable of doing any harm? The surgeon must answer these questions in each case according to his best judgment.

Dr. Thompson next considered the question as to a second operation for the intestinal obstruction. It was undoubtedly necessary in some cases to operate, but the question arose when to do it. He believed that the tendency was to wait too long before operating. The main point was to decide the proper moment for interference. In instances of mechanical obstruction, by bands, twisting, etc., the rule should be to operate as soon as possible. Judgment and experience were the factors which would best enable the surgeon to settle the oftentimes difficult question as to the advisability of a second operation; and these two factors were the patient's most efficient safeguard.

Dr. Henry D. Fry expressed appreciation of the paper. An exchange of views on these subjects was helpful to all. Every operator experienced a feeling of satisfaction when he noted that the abdomen was flat after laparotomy, and that there was a normal expulsion of gas and feces, and any addition to our knowledge which tended to bring these conditions about was of value. In January he did a Caesarean section, removing a large living child. The small intestine was not in view during the entire operation. The operation was completed at noon. The patient

was comfortable until night, when vomiting set in. The next morning there was distension of the abdomen, the pulse was a little fast, and there was a little fever. He was worried, fearing peritonitis, paresis of the bowel, volvulus, or some similar condition. One-20th grain of eserine salicylate was administered hypodermically. This resulted in two movements, the first within twenty minutes; the vomiting also ceased, and he felt much encouraged. The question as to the advisability of reopening the abdomen occurred to him, but was decided in the negative, owing to the patient's improved condition. The patient died on the third day after the operation. At the autopsy the intestines were found flat, and the uterine wound was in good condition. The abdominal distension was found to be due to the stomach, which was distended like a large balloon on account of a twisting of the duodenum. When, at the operation, he had lifted the uterus out of the wound, he put in a hot towel to keep the intestines back; it is possible that in withdrawing this towel subsequently a half turn may have been given to the duodenum, which gave all the trouble. He believed that the shoving and pushing necessary to replace the intestines was responsible for most of the cases of post-operative intestinal obstruction. He advocated the use of eserine hypodermically in these cases. It was originally suggested by Craig, of Boston. Dr. Fry used it in all cases in which he feared paresis, and it usually produced an action of the bowels within two to six hours. It was easily administered, and produced beneficent results. He mentioned cases in which he had used it to good advantage. The salicylate was preferable, as it was more permanent. It was also useful in eclampsia.

Dr. A. F. A. King said that cases had been reported, in hysterical individuals, where the symptoms of intestinal obstruction (pain, fecal vomiting, constipation, etc.) were due, not to mechanical obstruction in the gut, but to "*antiperistaltic movement of the bowel.*" This was demonstrated in one case by Kinstein, who resected a piece of intestine and reunited it in the opposite direction; and in another by Mühsam, who practically inverted the whole small intestine, and in both instances the normal movements immediately began.

In these cases there would seem to remain a fear that the intestine might resume its normal function, when it would be necessary to operate again and put things back as they were before. (See *Am. Jour. Med. Sciences*, January, 1905, pages 158, 159.)

Dr. Balloch said that the paper was very interesting; it was also of great importance, as the surgeon was, at the present time, almost helpless in the face of adynamic ileus. He was glad to hear Dr. Fry commend the use of eserine. Craig had recently spoken highly of it to Dr. Balloch, and advised its early administration, Craig's practice being to give it as soon as the abdomen was opened. Dr. Balloch believed that prolonged administration

of the anesthetic was one factor in the production of intestinal paresis; another factor was the Trendelenburg position, and the packing of the intestines up against the diaphragm. After all had been said, however, there was no one way, either to treat or to prevent the accident. Its occurrence depended somewhat upon the conditions present and the condition of the patient. He commended enterostomy as being a timely and life-saving measure in cases where more radical operations would prove fatal.

CASE OF PSEUDO-HERMAPHRODITISM IN A PIG.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

Some time since the Army Medical Museum received a specimen of this malformation. The pig was ten months old, and the owner stated that it showed bisexual inclinations. This probably explains the very patulous condition of the rectum, which no doubt served for copulation by reason of the other pigs making a mistake in diagnosis. The vagina is, however, entirely absent, but the labia, clitoris and a female urethra are present. There is no penis, but the testes are well developed. Internally are the urinary bladder with prostate and vessels of the spermatic cord.

The presence of testes and absence of ovaries shows this to be a case of male pseudo-hermaphroditism, as indeed are almost all the reported cases. The difficulty in diagnosis is not limited to the lower animals. Many similar cases in the human subject have appeared in all their social relations as girls until arriving at an age when the sexual proclivity and the appearance of the beard removed the doubt. More than this, some persons with this anomaly have even married, and have learned their actual condition only after consulting some physician because of sterility.

There are many degrees or forms of the malformation which, however, need not be considered.

Dr. Bovee said that he was glad to hear the specimen spoken of as an example of false hermaphroditism, as many were erroneously called true. It was possible that one recent case was of the true variety, but even this was a matter of doubt. Many operations had been performed for this condition—unjustifiably, as a rule, because of mistakes in diagnosis. One should be guided by two rules in these cases: 1. Wait until the 30th year of life,

*Reported, with specimen, to the Medical Society of the District of Columbia, February 1, 1905.

and watch for evidence on which to determine the sex of the individual. 2. After this time operation was justifiable to ascertain whether ovaries or testicles were present or absent.

These cases were unique as regarded their effect upon society. Cases had been reported in which the individuals had married and lived for years as women, later to assume their true position as men, both in dress and conduct toward the opposite sex. The reverse as to sex had been perhaps as frequent. As to the evidence of the sex the observer might be easily misled. In the celebated case of Katherine Hohmann an epistaxis was sufficient for the subject to smear the genitals with blood, and this misled Rokitansky to consider it menstrual blood and the sex erroneously female.

Dr. Lamb said that there was in the Museum a specimen of what was said years ago to be true hermaphroditism in the human subject. The specimen was received in 1871, and had been on record from 1844. It was really a case of undescended testicle, and this was one explanation of pseudo-hermaphroditism. The microscope, in the case referred to, showed that the supposed ovaries were really only masses of fat.

CASE OF CROUPOUS PNEUMONIA AND PERICARDITIS.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

From a man, age 41, an oyster shucker by occupation. His work was in a damp place. Except the usual diseases of childhood, he had had good health until November 19, 1904, when he was taken sick with a dry, hacking cough, pain and tightness in the chest, pains in back, shortness of breath, fever, anorexia and weakness. . He became worse, had pain in chest from coughing and in taking a deep breath; expectorated a yellowish-green matter. Was admitted to hospital on 29th; anxious face; eyes yellowish; lips dry; pulse 100; weak and compressible; temperature 98 to 99.2; respiration 30 to 40; vocal fremitus increased; marked dulness over right and some over left lung; bronchial breathing on right side; crepitant and mucous râles. He died next day after admission.

The *post mortem* examination showed red and gray hepatization of right lung and congestion of left. The pericardium, both surfaces, was thickly covered with recent lymph. Abdominal organs normal.

* Reported, with specimen, to the Medical Society of the District of Columbia, February 1, 1905.

CASE OF ANOMALIES OF URINO-GENITALS AND RECTUM IN SEVEN MONTHS FETUS; MAINLY HYPERTROPHY OF BLADDER.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

Dr. J. J. Repetti brought a seven months female fetus to the Army Medical Museum with the following history. He was called, January 21, 1905, to see Mrs. S., age 25, who was in labor. She had been married a little over four years and had had three children, of whom one was dead; died at seven months from malnutrition, the mother at the time being pregnant. The oldest child had been wearing a plaster jacket for seven months because of Pott's disease. Both parents were healthy.

She had been in labor six hours; the head protruded at the vulva, and in an hour after the Doctor's arrival was born. There were, however, no further pains, and traction was made with the fingers on the neck, without success. As the fetus was becoming cyanosed, chloroform was given to the mother to relax the parts and traction was renewed. The vagina was capacious. The continued traction lacerated the neck of the fetus; the arms were pulled down, and during traction about two quarts of water came away, followed by the fetus.

It was the distended abdomen that caused the difficulty.

Examination disclosed the following anomalies:

The urinary bladder was much dilated; its base and side walls were half an inch thick and quite firm; its fundus thick, but much less so than the base. The openings of the ureters were small but patulous; the ureters themselves were somewhat hypertrophied, dilated and tortuous. The kidneys were in normal position and apparently normal in structure. The urethra was patulous, but so obstructed by a valvular fold that it was with much difficulty that a probe could be passed through it by either external or internal openings. The obstruction was entirely mechanical, but had been so complete that it had caused retention of urine and hypertrophy and dilatation of the urinary ways. The distension of the abdomen was partly due to the urinary anomalies and partly to ascitic fluid.

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*Reported, with specimens, to the Medical Society of the District of Columbia, February 1, 1905.

The colon ended in the left side of the front of the bladder by an opening that admitted an ordinary probe ; there was no sign of rectum or anus.

The female external genitals were present, except that there was no vagina. The uterus and ovaries were adherent to the front of the bladder. All other viscera were normal. There was bilateral talipes varus.

So far as I recall, the only other similar case presented to this Society was that by Dr. Garnett, October 20, 1875, nearly thirty years ago. It was published in the Transactions for that year. There was the same difficulty in the birth ; the pains largely ceased ; traction was used, and as the infant had been dead for several days, the tissues were much torn, the head and some other parts being torn off. When Dr. Garnett realized that there was some unusual obstruction he called in Dr. W. W. Johnston. Dr. Johnston's efforts to deliver caused rupture of the fetal abdomen and discharge of much liquid. Still, however, the birth was delayed and the feet were therefore brought down, in doing which the bladder gave way and birth at once took place. In addition to the urinary anomaly there was a cyclops head and some malformations of limbs The cause of the bladder distension was the the urethral atresia. The case was complicated, as was Dr. Repetti's, by ascites. The quantity of amniotic fluid was estimated at 10 ounces, so that there was no hydramnios, as in many similar cases. Among those who discussed the case was Dr. A. F. A. King.

I mention Dr. Garnett's case, not only to show the apparent rarity of the anomaly as seen in this city, but because there is a difference in the character of the anomaly of the bladder. In Dr. Repetti's case the hypertrophy of the bladder is very marked ; in Dr. Garnett's case there was but little hypertrophy, but an enormous dilatation. The latter is much the commoner ; the former comparatively rare.

Dr. J. Taber Johnson described an interesting case in which he was able to deliver all of a baby down to the abdomen, which he had to puncture ; after the fluid had escaped delivery was effected. Subsequently it was found that the fluid came from an enormously distended bladder. The child was dead when he made the puncture. He asked Dr. Lamb how much fluid there was in the bladder of the fetus presented.

Dr. Lamb replied that he did not know, as the abdomen was ruptured before the specimen came into his hands.

Dr. Bovée said that the kidneys of the fetus appeared to be normal. The secretion of urine could not have been going on long against an obstruction, or disease of one or both kidneys would have manifested itself. The obstruction was evidently in the urethra.

CASE OF RETROPERITONEAL SARCOMA.*

By D. PERCY HICKLING, M. D.,

Washington, D. C.

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The specimen weighed 9 pounds and 5½ ounces. The spleen and left kidney were attached to it. Portions of it had undergone softening and there were also hemorrhages. The spleen was small and kidney compressed but appeared normal in structure. The patient was a man, age 41, an upholsterer by trade, who had had good health until 1903, when he had some stomach trouble with nausea, vomiting, headache and constipation, and lost flesh. About December 1, 1904, he had a recurrence of the same symptoms; weighed then only 113½ pounds. Pain and swelling of feet and ankles came on and they became cyanosed in nearly symmetrical patches; hands and forearms similarly affected; arteries somewhat sclerotic. He was admitted to hospital and died in about two weeks. He complained of pain in his fingers and ankles, increased on pressure; dyspnoea on exertion; pulse 88, temperature 98, respiration 20; there was a systolic murmur over the entire precordium extending to the right; flatness over left lung posteriorly and sibilant râles over right. Tumor in left side of abdomen. Some albumin in urine.

The *post mortem* examination made by Mr. Jett showed the following: Body poorly nourished. Heart 434 grams; mitral valve adherent and sclerotic. Aorta slightly thickened. Right lung 589, left 651 grams, and both congested. Intestines, spleen, pancreas and left kidney adherent to the tumor. Appendix showed adhesions, was 3½ inches long. Right kidney 279 grams. The spleen was small, the left kidney compressed by the tumor. All the organs except as stated were normal. Brain not examined.

The tumor itself weighed, including the attached spleen and kidney, 4,864 grams, and extended from the diaphragm, to which it was adherent, down to 1½ inches below the umbilicus and 3 inches to right of median line.

*Reported, with specimen, to the Medical Society of the District of Columbia, February 1, 1905.

Dr. Bovée said that retroperitoneal sarcoma was rare as compared with other tumors. They were interesting, nevertheless, and their removal required much skill, as the vessels were hard to ligate and the organs in the neighborhood were of such vital importance. The specimen showed how difficult it was to remove one and at the same time save the life of the patient. These growths were very deceptive as to their consistency ; he had been mistaken as to their nature, whether solid or cystic, on more than one occasion.

Dr. Lamb said that Dr. Geo. Ben Johnson, of Richmond, had given to the Museum two large retroperitoneal *fibro-lipomata* which he had removed.

CASE OF FIBROID TUMOR OF UTERUS.*

By J. TABER JOHNSON, A. M., M. D.,

Washington, D. C.

Mrs. X., colored ; age, about 40. Had three children between 20 and 30 ; none since. Has had a growing fibroid for ten years. The chief symptoms arose from pressure ; there has also been hemorrhage, which for the last few years has been alarming. She became unable to earn her living, and was finally driven to operation against the advice of many friends and some physicians.

The tumor, which weighs about ten pounds, was removed December 15, 1904, at a clinic at the Georgetown University Hospital. There was nothing unusual about the operation, or her convalesence ; just the usual course of a supra-vaginal hysterectomy for a fibroid ; free from pus degenerations, and adhesions. She said that several physicians had advised against operation because of the large number of "lumps," which could be easily felt, and which were thought to cause dangerous adhesions, or to be an evidence of malignancy. She left the hospital about two weeks ago, and is now very well.

Much would be gained if there was only some way to remove these large tumors and at the same time save to the patient the great quantity of blood which they often contain. He knew of two or three cases in which he was sure that death was caused by this loss of blood, a quart or more draining from the tumor into the bucket.

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Dr. Smith said that there were three reasons for operating upon these growths : 1st, the severity of the symptoms ; 2d, to anticipate complication ; 3d, to display the skill of the surgeon. He asked Dr. Johnson and other operators why they did not tell us about the cause and prevention of these tumors. Was there any means by which the growth could be stopped at an early stage ? The cause was said to be some local irritation or inflammation ; was there anything we could do to stop it ? If not, should they not be removed in their incipient stage, before the life of the patient was endangered by adhesions or loss of blood ? Dr. Thompson would operate for hernia at once, believing that the patient's life was in constant danger ; yet a woman with a fibroid as large as the fist was allowed to go without operative interference, if there were no actual symptoms, until it reached the size of a market-basket, and then it was removed.

Dr. Bovee said that Dr. Smith's remarks were both amusing and timely. Br. Bovée was glad that Dr. Smith had asked the question, as a few years ago Dr. Smith was answering it in another way. He believed that Dr. Smith was now right, however ; the tumors should be removed early. Their causation was unknown, but it was a matter of constant study. Dr. Johnson said that he knew this growth was not malignant ; he meant that he was confident of it, because only by a microscopical examination could one be sure as to the exact nature of these tumors. Operating surgeons who had made it a practice to have a microscopical examination made in all cases had shown that many growths which were apparently benign showed evidences of malignancy, and some would unquestionably have eventually caused death from malignant disease. This fact was another argument for early removal. Dr. Bovée did not remove the uterus unless absolutely necessary, unless the woman was near the age of menopause. In case of a woman 25 years old, for instance, who was anxious to become a mother, the uterus should be saved to her if possible. One danger which might result from myomectomy was that of rupture of the uterus during pregnancy.

Dr. Johnson said that Dr. Bovée had not understood him aright. He had said that inasmuch as the growth was ten years old it was pretty evident that it was not malignant. He had also said that this was a comparatively easy operation, because none of the possible degenerations, pus collections and adhesions had occurred. We knew that cancer could not last ten years, and also that a fibroid by the end of ten years might have become malignant, but it had not been malignant all that time.

Dr. Smith's attitude had changed with reference to the treatment of these cases. Formerly he was inclined to criticise us for presenting the specimens, but now he advocated the removal of the whole uterus in order to prevent the development of a small fibroid. One could now remove a small fibroid without removing

the uterus; the latter could be left to perform its normal functions. It was true that subsequent to the performance of myomectomy other small fibroids might develop, but in the meantime the woman might have given birth to a child who might become a President of the United States. Myomectomy was the operation of choice. In answer to a question by Dr. Smith, Dr. Johnson said that he could not tell the proportion of cases in which he performed the operation.

The causation of these fibroid tumors was not understood, nor had we any sure means of stopping their growth. Goodell suggested that, inasmuch as they often occurred in women who do not have children, their presence might be explained on the ground that "Satan finds some mischief still for idle hands to do."

THE USE OF THE CYSTOSCOPE IN DISEASES OF THE URINARY TRACT OF WOMEN.*

By G. BROWN MILLER, M. D., B. Sc.,

Washington, D. C.

In surgical diseases of the genito-urinary tract of women the use of the cystoscope is today essential. The sooner this is recognized by the profession the better it will be for both the physician and his patients. That there should be a slowness to accept the truth of this statement by those not familiar with its usefulness, and a proneness to decry its value and to exaggerate its dangers among those who from lack of opportunity have not become familiar with the instrument, is quite natural. I had a similar feeling until by actual observation I was convinced of my error. The object of this paper is to attempt to demonstrate the value of a proper use of this instrument. I will not attempt to compare the various instruments which are in use today, but will speak only of the Kelly cystoscope, which is perhaps the simplest of the many valuable cystoscopes which have become popular.

The whole outfit, which consists of a few sizes of cystoscopes, one or two alligator forceps, an evacuator, two searchers, a urethral dilator, a few ureteral catheters, a head mirror, a good light, and some small cotton pledgets, costs only about $20 to $25. The cystoscopes, dilators, alligator forceps, catheters, evacuator and searchers can be sterilized by boiling and the cotton pledgets by steam sterilization.

* Read before the Medical Society of the District of Columbia, February 1, 1905.

The technique of the examination is as follows : The woman can take a general anaesthetic, or local anaesthesia may be used. In the latter case, after cleansing the external genitalia, the bladder is emptied, and a few drachms of 2-per cent. solution of cocaine are slowly injected into the urethra by means of a cone-nozzled syringe. Should the urine contain pus, the bladder should be irrigated with a saturated boric-acid solution, either before or after injecting the cocaine. The cocaine is allowed to remain a few minutes in the bladder, which is then completely emptied, and the meatus dilated with a conical dilator, so that it will easily admit a No. 9, 9½ or 10 cystoscope. The woman is then placed in the knee-chest position, and the buttocks covered by a sterile sheet which has a slit-like opening in it. The vagina is next dilated by lifting the perineum and allowing the air to rush in. The cystoscope is then pushed gently into the urethra until the end enters the bladder, the obturator is withdrawn, and the bladder dilates with air. Should any fluid remain in the bladder this is removed by means of the evacuator. By means of reflected light and by changing the direction of the cystoscope the entire bladder can, as a rule, be inspected. In case the bladder is very irritable, the patient very nervous, or an operation is to immediately follow, general anaesthesia should be employed.

The first portion of the bladder to come into view is the trigonum. The ureteral orifices can be seen by turning the tube slightly to either side and elevating the end of the instrument. Looking directly across the bladder to the sides, and finally by depressing the point of the cystoscope, one can see, in turn, the whole of the bladder wall. Finally, as the instrument is withdrawn, the urethra is inspected. If it should be desired to catheterize the ureters, this is done by finding the ureteral orifices and gently inserting the ureteral catheter.

What may be accomplished by the examination of the bladder and urethra? *The presence of a foreign body can be ascertained, and frequently the body can be removed without making an incision into the bladder.* As an illustration of this, I will detail the following case, which came under my care in Baltimore : A woman who was about three months pregnant attempted to bring on an abortion by inserting a French bougie about the diameter of a silver catheter into what she thought was the uterus. She pushed the bougie into the supposed uterus until it finally disappeared. She now

began to suffer with frequent and painful micturition, and was brought into the clinic about twelve hours after the accident occurred. The urine was slightly bloody and the patient had a constant desire to empty the bladder. The pelvic examination showed the uterus to be pregnant, but was otherwise negative. By means of a rather large cystoscope the bougie could be seen lying in the bladder and doubled several times upon itself. It was caught with the alligator forceps and removed.

Calculi, pieces of broken catheters, or a catheter itself, sutures and other foreign bodies, if sufficiently small to pass through the cystoscope, can be readily removed. What is more important than the removal of foreign bodies is that their presence or absence may be positively ascertained without incising the bladder or dilating the urethra widely enough to admit the finger.

The condition of the bladder may be ascertained by the cystoscopic examination. The presence or absence of a cystitis, and, if present, whether it is general or local, whether mild or severe, whether ulcerative or not; the presence of a fistulous tract or of tumors; and the extent of the bladder involved in these processes may all be determined, as a rule, by this means. The following is a case which will illustrate the value of a cystoscopic examination:

Mrs. A. H., of Maryland, came to my office in June, 1904, complaining of frequent, painful and bloody micturition. When six years old she had an attack of "gravel," but since then she had been in good health until one year before I saw her. Her present illness began then with scalding micturition. Soon she noticed that the urine contained blood, which was, at times, bright red and again dark and clotted. The urine when she was seen was very offensive, and she passed it every hour or two day and night. She had never passed a calculus, but had noticed gritty material occasionally in the urine. She was suffering with pain over the loins, but her general health was fairly good, and she was ruddy and well nourished. The urine was alkaline and offensive, containing a considerable amount of mucus and pus, a few cylindroids, a trace of albumen and many bacteria. A streptobacillus; a short, plump, and a slender curved bacillus were noted in stained specimens. No tubercle bacilli were found. The bimanual examination of the pelvic organs and the abdominal examination were negative. The cystoscopic examination showed

that the base and fundus of the bladder were nearly normal. Looking directly into the bladder, there appeared on each side an irregular area the size of a half dollar, which had the appearance of a calculus imbedded in the bladder wall. The edges of these areas were sharply outlined and were slightly raised. A zone of inflammation surrounded the area for 1 to 2 cm. and shaded off into nearly normal looking bladder. The ureteral orifices appeared normal. On pulling off some of the supposed calculi, the condition proved to be ulcers which were encrusted with urinary salts. She afterwards consulted Dr. I. S. Stone, who sent her into the Columbia Hospital, where he curetted the incrustations and put her upon boric acid irrigations with gradual dilatations of the bladder. She improved markedly, and finally had one or two irrigations of dilute nitric acid solution. Dr. Stone left the city at this time (a few weeks after the treatment began), and she fell again into my hands. The bladder now held 13 ounces of fluid, the urine was alkaline, and contained a small amount of pus and a trace of albumen. The cystoscopic examination showed the bladder to be normal except inflamed, slightly oozing areas upon the sites of the old incrustations. She was now put upon urotropin internally, the boric irrigations were continued, and each was followed by an instillation of a few ounces of one-half per cent. protargol solution. In a few days the urine was acid and free from pus, and the patient had no pain and no frequency of micturition. The urine remaining normal for a few days, and there being no return of symptoms, she was allowed to return home.

The extent of tuberculous processes can be determined with a fair degree of accuracy and the feasibility of their removal by operation decided upon by the cystoscopic examination. By the same means the presence of a carcinoma, a papilloma, or other tumor of the bladder or urethra can be ascertained, and if it should be desirable a small piece removed for microscopical examination. The opening of a fistulous tract between the bladder and intestine, vagina, abscess cavities, etc., may be seen and investigated. Fistula which communicate with the urethra may also be noted. In the few cases of suburethral abscess which I have seen the communication between the abscess and urethra has been observed and the nature of the disease thus made perfectly apparent. The presence of a urethritis, a fissure, or an

ulcerative process of urethra can be determined by inspection of the urethra. Applications to the urethra or to localized areas of inflammation in the bladder are likewise readily made through the cystoscope and under direct vision.

The catheterization of the ureters through the Kelly cystoscope, while it requires considerable practice to attain proficiency, can, as a rule, be accomplished in as short a time, and probably with less danger of carrying in infection than where this is done through a fluid medium. The catheter touches only the cystoscope and the opening of the ureter, which can be sponged off with a cotton pledget moistened with an antiseptic solution. The urine which flows into the bladder accumulates in the dependent portion of the organ away from the ureteral openings and is not likely to contaminate the catheter. In hysterectomy for carcinoma of the cervix, and occasionally in other operations for pelvic diseases, the catheterization of the ureters is a material aid to the operator by enabling him to locate these structures by touch and thus avoid injuring them in the operation. Where there is a ureteral fistula the use of the ureteral catheter will usually determine which ureter is affected, it being, at times, quite difficult without this aid to determine which side is sound and which is diseased. After operations where the symptoms point to an obstruction of the ureter from ligature, or clamp, the use of the catheter may definitely settle this point, and thus one may, by timely interference, save the patient's life, or else avoid an exploratory operation which may not be necessary.

The examination of the urine collected from each kidney will, as a rule, indicate their condition, and on this we may base a rational mode of treatment in surgical diseases of these organs. If the symptoms and the examination of the abdomen in any case point to disease of one kidney, and if an infection of the bladder be present, we may catheterize only the side suspected and by comparing the urine so obtained with the mixed urine a fairly accurate idea of the condition of each kidney can be obtained. The following case will illustrate the information obtainable by the catheterization of one ureter and the examination of the bladder: Mrs. B. J., aged 37 years, came to me in June, 1902. In February of the same year she began to suffer with frequent and burning micturition. Prior to this time she had enjoyed fairly good health, except that in 1900 and 1901 she had suffered

with a few attacks resembling left renal colic. At the beginning of her bladder trouble the urine was clear and remained so for some weeks. She never passed any blood. About the middle of May, 1902, she began to suffer more, and was put upon irrigations of permanganate of potassium, and later, irrigations of boric acid solution. The urine was examined repeatedly, and she was told that she had no disease of the kidney. The pain in the bladder grew worse; she lost 10 to 12 pounds in weight and was quite miserable. Her temperature ran from 99.5 to 103, and her pulse from 86 to 104. The urine was acid, sp. gr. 1015, contained a considerable amount of albumen, a large quantity of pus and epithelial cells. Stained specimens showed a large number of tubercle bacilli along with other bacteria. She passsed from 20 to 50 ounces of urine in 24 hours. The pelvic examination showed a retroverted, movable uterus, but was otherwise negative; the examination of the chest was negative, while palpation of the abdomen elicited some tenderness over the left kidney. She was sent into the Garfield Hospital and the bladder examined under anaesthesia. The examination showed a general reddening of the bladder mucosa, while here and there were seen vesicular looking bodies one to two millimeters in diameter, which were surrounded by a narrow zone of puckering or contraction of the tissue. A number of small, grayish nodules, surrounded by a zone of reddening, were also seen. The right ureteral orifice appeared normal. About the left ureteral orifice was an irregular area of superficial ulceration, two centimeters in diameter, covered with muco pus. After cleansing this area the ureteral opening was found and the ureter catheterized, the catheter ascending to the pelvis of the kidney. There was an immediate outflow through the catheter of about two ounces of pale, watery-looking urine. Downward pressure over the kidney increased the rapidity of this flow. The urine obtained was full of pus, and stained specimens showed many tubercle bacilli. A comparison of the mixed urines with that obtained from the left kidney showed that the mixed urine was darker in color, had a higher specific gravity, and 2.7 per cent. of urea, while the percentage of urea from the left kidney was 1.1 per cent. Assuming that the kidneys were excreting an equal amount of urine, then the work done by the left kidney was approximately about one-fourth that done by the right. It was, however, safe to assume

that more urine came from the right side. The conclusions which could be arrived at from these data were, (1) the patient had undoubted tuberculosis and hydronephrosis of the left kidney ; (2) there was probably tuberculosis of the bladder, and (3) the right kidney was probably not involved in the process. The latter conclusion seemed warranted by the facts that it was excreting an increased amount of urea ; that she had suffered no pain in this side, and that the right ureteral orifice was not diseased. The right ureter was not catheterized because the patient refused to consider operative treatment and because there was in the presence of an infected bladder a possibility of carrying infection into the other kidney. She afterwards went to Baltimore and consulted Drs. Osler and Kelly who with the data obtained by me advised an operation, the nature of which should be determined by the condition found at the time. Had she consented to an operation the catheterization of the other kidney would have been done and the condition of this kidney determined so far as could be done by the urinary examination. The patient returned home and was put under the best hygienic conditions possible. She obtained considerable relief from her suffering by means of bladder irrigations, regulation of food and drink, and a periodical course of urotropin. When last heard from, one year afterwards, the urine was full of pus and her general condition was practically unchanged.

Another valuable use of the ureteral catheter is to determine just where the constriction or kink is in the ureter in cases of hydronephrosis. Kelly has advocated the use of a wax-tipped catheter in suspected stone in the kidney or ureter. He has reported a number of cases, some of which I saw, where from the scratch marks in the wax the diagnosis of a calculus was made and confirmed by operation. I have had only one case of this kind where the findings were positive. Should the calculus be in such a position that the catheter does not impinge upon it, of course the procedure is of no value. When the stricture or stone is situated in the ureter one meets with an obstruction (or a resistance which may not prevent the passage of the catheter) at this point. By measuring the length of the catheter engaged the position of the stone, stricture or kinking can be determined. I have catheterized the ureter in two cases for Dr. Stone where the diagnosis was made perfectly apparent from this procedure. The

first was a large hydronephrosis kidney in which a calculus was suspected to be in the ureter. The catheter went to a point which was estimated to be the lower part of the kidney pelvis and there stopped. On withdrawing the catheter was bent at its tip. A wax-tipped catheter showed the same condition but no scratch marks. No urine escaped from either catheter. The diagnosis was made of a sharp bend of the ureter at this point, and this diagnosis was confirmed by the operation.

The other case was seen some four weeks ago. There was a definite history of intermittent hydronephrosis in a girl 13 years of age. The catheter entered the kidney pelvis without marked obstruction anywhere. There was a rapid outflow of a few ounces of urine, indicating that there was a collection of urine in the pelvis, and that there was no obstruction lower in the ureter. At the operation which immediately followed a hydronephrotic kidney was found with the end of the catheter in the pelvis.

I will not weary you with a further detail of cases, but will only mention the fact that in several others in the past three years valuable information had been obtained. That this information was in one case not correctly construed meant a fault in our method of reasoning. The information gained was correct in every essential detail, but it was not correctly interpreted.

In closing I wish to say that cases will arise where the ureters can not be catheterized, but this is exceptional; that one may overlook some lesion of the bladder or urethra, but the same is, however, done in any method of examination of almost any organ; that the ureters should not be catheterized, and the bladder should not be examined unless there are definite indications for so doing. The following statements, however, I can make with a positive belief in their correctness: first, the cystoscope is an invaluable aid in diagnosis, and is useful in the treatment of genito-urinary diseases in women; second, that it is obligatory upon us to know, if possible, the condition of both kidneys before removing either; third, that by taking proper precautions the danger of carrying infection into the kidney by the catheter in properly selected cases is minute.

Dr. I. S. Stone said that he was glad he had heard Dr. Miller's short, but very valuable paper. He acknowledged the aid which these examinations had afforded him; sometimes they were invaluable. He had always been afraid that damage would be done by a ureteral examination, but the cystoscope, in proper hands,

was devoid of danger, and he had no opposition or criticism to offer against the practice of cystoscopy. There were cases where the greatest caution must be observed in using the ureteral catheter, as the ureter had been injured where it passed over the pelvic brim. He mentioned such a case. Another point: It required a skilled man to use the ureteral catheter. He himself had tried to use it, but with poor success, and he was therefore glad to have the assistance of Dr. Miller.

The "segregator" was simple in application, and absolutely safe in cases of infected bladder. By its use one could get the separate urine from each kidney without the use of the ureteral catheter. He had employed it with great satisfaction. Every physician who proposed to treat the female bladder should have a cystoscope and the necessary electrical outfit. In some cases it was indispensable to making a correct diagnosis. In illustration he mentioned the case of a young woman who had had two severe attacks of inflammation of the bladder. Tuberculosis was suspected, but there were no bacilli in the urine, and so the diagnosis remained for a time a matter of doubt. When the cystoscope was used, however, it disclosed the true nature of the trouble at once. He commended the use of protargol, and agreed with nearly all that Dr. Miller had said.

Dr. Bovée commended the paper, but was obliged to disagree with the essayist in several minor details, particularly the danger of infecting the ureters from an infected bladder. If he thought that there was already infection on one side he would prefer to catheterize the affected ureter. The junction of the ureters with the bladder was a natural barrier to infection, and great care should be taken not to carry bacteria, etc., beyond it. Hence, he was accustomed to use the segregator. Again, nearly always some blood followed the introduction of the ureteral catheter, resulting from injury to the mucous membrane. Also, the catheter might be broken off. He mentioned a case reported in Cullen's book on cancer of the uterus in which this happened, symptoms of suppression of urine followed, and the patient died on the ninth day.

With the cystoscope, also, there was danger of carrying gonococci upward from Skene's glands and producing inflammation, whereas they might otherwise have remained quiescent for years. Kelly's cystoscope was the best to use for mere inspection of the bladder. Those which passed far into the bladder might cause hemorrhage from papillomata should they be present. Ureteral catheterization was an advance over X-ray photography in making a diagnosis of ureteral calculi. Some of the most expert X-ray photographers had made blunders in demonstrating these calculi. Edebohls reported an instance last spring in which a Rochester specialist made an X-ray picture, and demonstrated what appeared beyond question to be a ureteral calculus, and in-

dependently a New York X-ray specialist produced a duplicate. At operation, however, no stone, enlarged gland or other hard substance was found. A prominent specialist in this city made such an examination for Dr. Bovée in a certain case. The history pointed strongly to ureteral calculus, and the photograph appeared to sustain the diagnosis. At operation, however, no evidence of ureteral stone or thickening was found, and the patient could not have passed a stone in the interval. He had not used the wax-tipped bougie, but he believed that it was a more delicate means of making a diagnosis than the X-ray apparatus.

Dr. Miller said that he fully appreciated the possibility of carrying infection upward from the bladder. Hence, he advocated catheterizing the ureter only on the affected side in most cases. By comparing the urine thus obtained with the mixed urine a fair knowledge of the condition of the kidneys could be gained. With careful manipulation, the woman being in the knee-chest position, the danger of transmitting infection was very slight. In typhoid and some other diseases bacteria were often found in the urine, and yet the kidneys did not become infected. Even the pus formation which resulted from the presence of a renal calculus disappeared when the stone was removed. The greater his experience became, the more he was inclined to agree with the other specialists that the danger of causing infection in the kidneys through instrumentation was very slight.

In the fatal case mentioned by Dr. Bovée, Dr. Kelly used a hard-rubber bougie instead of a soft catheter; the bougie was broken by a clamp; nothing of the kind could have occurred had a soft-rubber catheter been used. The value of the wax-tipped bougie was considerable. If the stone was lodged in the kidney or ureter a scratch mark was almost sure to appear. Finally, in his opinion, there was no more danger of infecting the bladder by the cystoscope than there was in catheterization.

A METALLIC TUBE FOR CONTINUOUS IRRIGATION; FOR USE AFTER PROSTATECTOMY.*

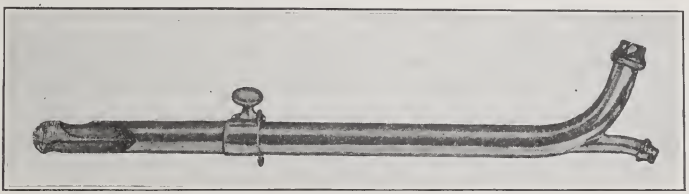
By FRANCIS R. HAGNER, M. D.,

Washington, D. C.

The tube is 12½ cm. long, the size of a No. 30 French catheter. It is composed of a larger tube, in which is incorporated a smaller one. At the vesical end are two openings, the larger being the outflow and the smaller the inflow. At the distal end the tube diverges, the larger one being attached to a drainage tube that is

* Exhibited to the Medical Society of the District of Columbia, January 25, 1905.

carried to a bucket under the bed, the smaller for the attachment of the tube from a fountain syringe which is suspended two or three feet above the patient. After the tube is inserted it is held in place by a movable steel collar, controlled by a thumb screw. Attached to the sides of the collar are two small rings, through which are passed the retention sutures from the perineal wound.



By loosening the thumb screw the tube can either be pushed farther in or drawn out without disturbing the dressings. Dr. Hagner has also been able to remove the tube through the collar and replace it again in the bladder without disturbing the packing in the perineal wound. Until he had this instrument made he had used two catheters, stitched together as advised by Dr. Young, of Baltimore. The advantages of continuous irrigation in these cases are :

1st. That the coagulation of the blood from any hemorrhage that may take place in the bladder and occlude the tube, as occurs in a tube without continuous irrigation, does not occur.

2d. That the liability to sepsis is lessened.

3d. The patient is comfortable and does not have to be disturbed by irrigations.

It had been Dr. Hagner's experience that there was at times some difficulty in introducing the rubber tubes, especially if in the removal of the prostate by Young's operation the prostatic urethra was injured. If, by any chance, the rubber tubes become plugged and have to be removed, it necessitates taking out the sutures and removing the packing from the perineum.

If the bladder is badly infected the irrigations are kept up for four or five days, and even longer. If the bladder is not infected the continuous irrigation is stopped as soon as the fluid from the bladder comes away clear. The tube is allowed to remain in place for 24 hours after the hemorrhage is stopped. It is then removed, but the collar is left hanging to the perineal

sutures. In this way, if a hemorrhage should occur and it was found necessary to replace the perineal tube, it could be easily done by passing it back through the collar into the bladder to its proper position, and it is then securely held in place by tightening up the thumb screw.

Dr. J. Ford Thompson complimented Dr. Hagner on his ingenuity in getting up the instrument. It was undeniably a very ingenious device, and was undoubtedly one of the best, provided the indications for its use were present. The only question was as to its usefulness. Would Dr. Hagner use it for fear of hemorrhage in prostatectomy, or to treat it after it had arisen? Hemorrhage sometimes followed enucleation of the middle lobe of the prostate, and the blood might collect in the bladder; here the instrument would undoubtedly be useful. As a rule, however, there was scarcely any hemorrhage after enucleation of the whole gland, and it was decidedly questionable whether it was not better, under these circumstances, to leave the patient to rest in quiet than to subject him to the annoyance and disturbance of continual irrigation.

The main question, however, was as to the desirability of continuous irrigation. One could readily see that it would be useful when hemorrhage continued after operation, or in the rare instances where it was necessary to irrigate the bladder at very frequent intervals. But in the vast majority of instances, in spite of the opinions of Young, Keen and some others, Dr. Thompson believed that it was undesirable. The procedure was very inconvenient, requiring the careful attention of an assistant for four or five days to look after the supply of fluid and its temperature, and if the details were not carefully watched serious harm might be done. It was far better in most cases, after prostatectomy, to let the patient rest in quiet, and not subject him to the annoyance of such manipulation. Nevertheless, Dr. Hagner deserved credit for having met a want, when the indications which he had mentioned for the use of the instrument were present.

Dr. Balloch said that Watson, of Boston, some years ago suggested a somewhat similar appliance—a perineal drainage tube, which could be tied in place with tapes. Watson's, however, was a single tube. As he understood, Dr. Hagner's instrument was devised not so much to meet hemorrhage as to prevent the formation of clots and provide an effective method of irrigation in cases of infected bladder, etc. Here it was unquestionably useful. If properly done, the manipulation should cause the patient little annoyance, and the disturbance was more than offset by the relief afforded; the relief was much greater than that afforded by any other form of drainage.

Dr. Thomas C. Smith asked how it was possible to tell whether

the kidneys were acting properly when continuous irrigation was practiced.

Dr. Hagner, in closing, said, in answer to Dr. Thompson, that the tube was only used until hemorrhage stopped, unless the bladder was infected. There was always some oozing, and the blood naturally tended to back up into the bladder; hence the use of some tube was imperative. Continuous irrigation stopped the formation of clots, and thus prevented the closure of the opening of the tube. As to inconvenience, all that was necessary was to keep a supply of water in the reservoir and keep it at a certain temperature. The water was put in the reservoir at about 110 degrees, and about two quarts would last from one-half to three-quarters of an hour. There was very little leakeage, and the patient was kept almost perfectly dry. The disturbance to the patient was practically *nil*, and the relief afforded was great. In reply to Dr. Smith, he said that the only way to judge whether the kidneys were acting properly was by observing the general condition of the patient. Of course the irrigation could be stopped at any time, and the urine could then be subjected to examination.

CASE OF OVARIAN TUMOR AND DEGENERATED APPENDIX.*

By I. S. STONE, M. D.,

Washington, D. C.

Dr. Stone reported the case, and presented a portion of an ovarian tumor removed from the right broad ligament, and also an appendix apparently undergoing the same degenerative changes as the ovary; both specimens from the same patient. She was a mulatto woman, sent to the Columbia Hospital from a neighboring State; about 45 or 50 years old. She was still menstruating, and the mother of several children. Her health was only fairly good prior to 1904, when she began to experience pain in her pelvis and, finally, one month since, she found her abdomen was growing larger. The physician who sent her to the city had only seen her professionally the day before her admission to the hospital, January 3, 1905. Her history was very indifferently given, and was not reliable or clear as to her experience since the commencement of her illness. She had evidently lost much in weight, was ill, and appeared to be in such distress and such poor condition as to cause us some apprehension. The examination of the

*Reported to the Medical Society of the District of Columbia, February 8, 1905.

tumor gave us pretty conclusive evidence of its location within the broad ligament, or at least under the peritoneum. It was very low in the pelvis, while the uterus was high up on the left. It was evidently a multilocular cyst filled with thick or semisolid contents and without free fluid in the peritoneal cavity. Knowing how rarely the regulation multilocular cyst was found in the negress, we hesitated in this case, although the patient was a mulatto, to say she had this variety of ovarian tumor. We knew that by far the greater number were papillomatous, or otherwise malignant, or dermoid, or irregular in some way, and were not surprised to find in the present instance what appears to be an adenocarcinoma. The technique of removal need not be mentioned. The appendix was practically occluded at its base and evidently undergoing some degenerative change. We found several suspicious looking points where the peritoneum, and especially the omentum, showed an extension of the disease. It appears probable that this process of dissemination was greatly hastened by the ruptnre of the tumor which had occurred at some time previous to her coming to Washington. She recovered.

CASE OF RETROPERITONEAL FIBROMA.*

By I. S. STONE, M. D.,

Washington, D. C.

Miss S., white, aged 50; had always had excellent health and was active and very industrious, and only recently yielded to the solicitation of her friends to have an examination made to ascertain why she was growing so much larger in the lower abdomen. Her periods had been irregular and had practically ceased during the year just ended. Only once had she been anxious about an increased flow, and that appeared to have its origin within the rectum. She had few of the symptoms usually observed in patients having uterine fibromyomata and had no great amount of pain or pressure symptoms within the pelvis. She had slight discomfort from pressure upon the organs in the upper abdomen, and on two occasions was obliged to lie down while her heart rested and until she could again "breath naturally." On examination we found the tumor to be nearly all solid, with vague

* Reported, with specimen, to the Medical Society of the District of Columbia, February 8, 1905.

fluctuation over its right lower aspect, and also less prominent upon the left side, but reaching from a little above the perineum to a point above the right costal margin and actually fitting snugly under the liver. We could obtain very little resonance upon percussion at any part of the abdomen; the intestines were, however, displaced upward and to the left; the tumor had its origin from the right side of the uterus into the corresponding broad ligament. The uterus and bladder were high up and displaced to the left side. The cervix could scarcely be reached through a very narrow vagina, which was also displaced to the left by the lower lobe of the growth. The rectum was pressed firmly backward, and it was difficult to pass the index finger through the rectum and between the tumor and the pelvic wall.

The general condition of the patient being excellent, we had no hesitation in offering to undertake the operation for the removal of the tumor, although we were careful to tell the friends that the danger from such an extensive dissection was, of course, far greater than would ordinarily be the case. When the abdomen was opened, we found, as was expected, a broad ligament tumor, and proceeded with its enucleation from its capsule, which was accomplished without great difficulty. The lower portion, which fitted the pelvis snugly, gave us the most trouble and really was hard to extract from its bed. Owing to the narrow space between the growth and the pelvic wall, we had much trouble in liberating the tumor and in getting air into the space below. We were able to complete the enucleation from the posterior surface with far greater ease because there was abundant connective tissue between the tumor and the large vessels immediately behind. The ureter was exposed throughout its entire length and was displaced only at its lower or pelvic fourth. It is interesting to note the difference between the sarcomata and fibromata in the manner of their attachments. In our experience with retroperitoneal sarcomata we always note the characteristic involvement of connective tissue and the very intimate relation of tumor and vessels. The tumor weighed 16½ pounds and was removed January 30, 1905. The patient recovered.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, Monday, January 2, 1905.—Dr. Charles W. Richardson, President, in the chair; over 43 members present.

The annual report of the Treasurer was read and referred to an Auditing Committee, Drs. Woodward and D. S. Lamb.

Applications from the following candidates for active membership were read and referred to the Board of Censors:

Dr. John Bradford Briggs, Johns Hopkins University, 1902. Dr Earl L. Davis, Columbian University, 1903. Dr. H. H. Donnally, Columbian University, 1903. Dr. J. Ernest Mitchell, Columbian University, 1903. Dr. W. F. R. Phillips, Columbian University, 1890. Dr. B. M. Randolph, Medical College, Virginia, 1898. Dr. Joseph Decatur Rogers, Columbian University, 1902. Dr. Dwight Gordon Smith, Columbian University, 1903. Dr. Peter H. Steltz, Jr., University of Pennsylvania, 1888. Dr. Dr. Leon E. Story, Georgetown University, 1901. Dr. L. H. Taylor, Columbian University, 1903. Dr. Henry W. Tobias, Columbian University, 1901. Dr. Reginald R. Walker, Georgetown University, 1900.

Nominations of the following physicians, Dr. W. W. Keen, of Philadelphia, Dr. E. B. Dench, of New York, and Dr. John H. Musser, of Philadelphia, for honorary membership, were referred to the Board of Censors.

The nomination of Dr. Alfred W. Balch, U. S. Navy, for membership, by invitation, was referred to the Board of Censors.

The following were elected officers of the Society for the year 1905: *President*, Dr. T. N. McLaughlin; *Vice-Presidents*, Dr. John D. Thomas and Dr. Murray G. Motter; *Coresponding Secretary*, Dr. Thomas C. Smith; *Recording Secretary*, Dr. F. P. Morgan; *Treasurer*, Dr. C. W. Franzoni; *Librarian*, Dr. E. L. Morgan; *Board of Censors*, Drs. D. Olin Leech, Deale, Wall, F. R. Hagner and Moran.

Dr. S. S. Adams was elected to represent the Society as Vice-President of the Washington Academy of Sciences.

The Chair appointed as members of the Committee on Entertainment for the current year Drs. F. R. Haguer, Jackson and J. D. Thomas. The thanks of the Society were extended to the Knights of Columbus for the use of their hall for the Stated Meeting, and to Dr. Repetti for securing the use of the hall.

The thanks of the Society were extended to the retiring President, Dr. Richardson, for the efficient and able service which he had rendered during the past year as presiding officer.

Wednesday, January 11.—Dr. T. N. McLaughlin, President, in the chair; about 85 members present.

Dr. D. S. Lamb, Chairman of the Editing Committee, pre-

sented two bills—one for $134.57, for the publication of the ANNALS, and the other for $2.80, for reprints of the paper of Dr. E. B. Dench. The Treasurer was authorized to pay them.

Dr. James J. Walsh, of New York City, addressed the Society on the subject "The Irish School of Medicine."

A vote of thanks was extended to Dr. Walsh for his most interesting and instructive paper.

Wednesday, January 18.—Dr. T. N. McLaughlin, President, in the chair; over 50 members present.

The Editing Committee presented its annual report. See p. 73.

The Auditing Committee reported that the accounts of the Treasurer were correct.

The Chair announced the following changes in the Standing Committees for the year 1905:

Executive Committee: Dr. C. W. Richardson, in place of Dr. McLaughlin. The members whose terms expired January 1, 1905, were reappointed.

Editing Committee: Dr. Motter, in place of Dr. Jackson, resigned.

Committee on Essays: Dr. Balloch, in place of Dr. McLaughlin.

The Chair appointed Dr. Hickling a member of the Milk Commission, in place of Dr. S. S. Adams, resigned.

An annual assessment of $4.00 was levied.

Dr. Wood presented the following specimens:

1. Myoma of the Intestine.

2. Intussusception in an Infant. Discussed by Drs. J. Ford Thompson, D. S. Lamb and Balloch. See p. 14.

Dr. H. A. Fowler read the paper of the evening. Subject, "Nephritis and Hematuria." Discussed by Drs. F. R. Hagner, Carr, J. Dudley Morgan, Wood, D. S. Lamb and Balloch.

Wednesday, January 25.—Dr. T. N. McLaughlin, President, in the chair; over 32 members present.

The resignation from membership of Dr. Raphael B. Durfee was accepted.

Dr. F. R. Hagner exhibited "A New Instrument for Continual Irrigation and Drainage after Perineal Prostatectomy." Discussed by Drs. J. Ford Thompson, Balloch and Smith. See p. 62.

Dr. Henry D. Fry presented the following specimens:

1. Ectopic Pregnancy.
2. Disease of Kidney. Discussed by Dr. G. Brown Miller.
3. Bilateral Disease of Appendages.

1. *Ectopic Pregnancy.*—The woman was seen in consultation. She had been confined to bed for three weeks or more, and complained of abdominal pain, particularly on the right side. There had been metrorrhagia, and on that day small masses of membranous tissue came way. There was no history or suspicion of pregnancy. She

had not missed a period. Examination disclosed a mass on the right side. A diagnosis of ectopic pregnancy was made, and an operation was performed. Much black blood was evacuated. The tube was found unruptured, the blood having come from its abdominal end. There was therefore a tendency toward tubal abortion. The woman was unusually corpulent, and the abdominal incision passed through three and one-half inches of fat. Three layers of continuous catgut sutures were employed to close the wound. Perfect union resulted.

2. *Disease of the Kidney.*—The patient was a woman who had a backward displacement of the uterus. There was also evidence of kidney disease, pyuria, and frequent micturition. The result of examination for tuberculosis was negative. An abdominal incision was made, and both kidneys were found displaced; the right kidney was apparently normal, although somewhat hypertrophied and situated low down; the left was adherent, rough on its surface, and also displaced downward. Ventral suspension of the uterus was performed; also nephrorhaphy of the right kidney and excision of the left. [The latter kidney was exhibited.] The woman died on the fifth day after the operation.

Dr. G. Brown Miller said that the case well illustrated the value of examination of the bladder and separate urines. Dr. Fry, however, depended upon palpation of the kidneys at the time of operation. Possibly both kidneys were diseased. In all cases of pyuria the scientific way to determine the seat of disease was by an examination of, first, the bladder, and, second, the separate urines. A separate analysis was best, but if the urinary stream from only one ureter could be obtained, a fair deduction could be drawn by comparing it with the mixed urine found in the bladder.

Dr. Fry replied that Dr. Miller's remarks would have had more weight had it not been necessary in this case to open the abdomen anyway. He did not draw conclusions blindly, but gave the kidneys an accurate and careful examination by direct palpation within the abdominal cavity,—not from without. Thus, he ascertained their condition as well, or better, than he could by any other means. Having made up his mind as to the conditions, he acted accordingly.

3. *Bilateral Disease of the Appendages.*—At the operation a ruptured pus-tube was found on the left side. The intestine was so adherent that he had to leave some of the sac attached to the gut. The left broad ligament was torn to pieces in removal. Both tubes, ovaries and the uterus were removed. The Downes angiotribe was used, and it acted perfectly; there was no hemorrhage, and no need for sutures. Dr. Fry commended the instrument highly; it had many times given perfect satisfaction in his hands.

Dr. Mitchell read the paper of the evening, "Post-operative Intestinal Obstruction." Discussed by Drs. J. Ford Thompson, Henry D. Fry, A. F. A. King and Balloch. See p. 31.

Wednesday, February 1.—Dr. Murray Galt Motter, Vice-President, in the chair; over 45 members present.

The Treasurer reported for January, 1905. Received, $216.38; disbursed, $137.37.

The following nominations for membership by invitation were read and referred to the Board of Censors: Dr. Harvey W. Wiley, United States Department Agriculture. Dr. Bailey K. Ashford, U. S. A.

Dr. A. L. Stavely presented to the Society, with the accompanying memoranda, a photograph of one of the oldest members of the Society, Dr. Charles Worthington. The photograph was turned over to the Corresponding Secretary for safe keeping. The memoranda were as follows:

"The accompanying photograph of Dr. Charles Worthington, the illustrious founder of the Medical Society of the District of Columbia, is presented to the Society by his great grand-daughter, Mrs. E. W. Trescott, No. 1403 L Street, Northwest. The photograph was made by Mrs. Trescott, and is a copy of an oil painting that was destroyed in the Knox fire.

"Charles Worthington was born in 1759, and settled in Georgetown in 1783, at the age of twenty-four. He was the senior of the founders and one of the nine residing in Georgetown. He was the first President of the Society, and was re-elected for twelve successive years; he had, at the time of the foundation, the most extended observation of and most enlarged experience with the horde of charlatans and pretenders that so afflicted the two adjacent communities that the medical men of high repute were compelled to effect an organization for mutual protection and to inform the committee of the qualifications of those fitted to practice the healing art, which culminated in the charter, by an act of Congress, of the Medical Society of the District of Columbia in 1819. He and Frederick May were undoubtedly the two most influential medical men residing in this District at that date. They were intimate friends and associates, and allies in efforts to promote and advance the standing and influence of scientific medicine. These facts and circumstances add credence to the claim of some of his descendants that, if not the originator, he was one of the most active and efficient promoters of the movement to establish the Medical Society of the District of Columbia. In corroboration of this suggestion it may be added that at the earlier and preliminary meetings of the qualified physicians of the adjacent cities, even as early as 1813, Charles Worthington was the selected presiding officer, and usually a member of all important committees. He was not the first physician who settled in Georgetown. Dr.

Toner is authority for the statement that Walter Smith was probably the first, John Weems the second, and Charles A. Beatty the third, who preceded Worthington by one year. Not one of the three earlier settlers seems to have taken any part in the organization of the Society or to have co-operated in any procedure to promote the progress of the profession."

Dr. Charles Worthington "was an austere man (Johnston, 75th anniversary address), full of dignity and seriousness, devoting himself to his profession and to all good works with consistency and patience. He was the active founder of St. John's Church in Georgetown, the second church of the Episcopal rite in the District. To his latest day he dressed in the old style, his hair in queue, with knee-breeches, long stockings, and buckles on his shoes; he drove a coach-and-four when his journeys were long, as to Annapolis, or to his country place on the Seventh Street road, near where Brightwood now stands. He was a man of great ability, of untiring zeal and industry, and of lofty and honorable principles. During his long life of seventy-six years, with fifty-five years of active professional work, he was esteemed and admired, loved and honored, by all who knew him."

The following extract from the Proceedings of the Society sets forth the esteem and admiration of his colleagues: "The life of the late venerable Dr. Charles Worthington, formerly President of this Society, presents a sublime moral lesson to the medical profession. More than fifty-five years he practiced medicine with great success and with the most untiring zeal and industry. During that time his course was always marked with lofty and honorable principles, with the purest piety and integrity, and with the most unsullied reputation. He has descended to the tomb, beloved and revered by all who knew him, full of years and full of virtues."

Dr. Worthington married Miss Elizabeth Booth, of Jamestown, Va. Their descendants are residents of Washington. [From Dr. S. C. Busey's "Personal Reminiscences" p. 122.]

The following cases and specimens were presented: By Dr. J. Taber Johnson, Fibroid Tumor of the Uterus. Discussed by Drs. Thomas C. Smith and Bovée. See p. 51.

By Dr. D. S. Lamb, for Dr. Hickling: Retroperitoneal Tumor. Discussed by Dr. Bovée. See p. 50.

For Dr. Repetti: Monstrous Foetus. Discussed by Drs. J. Taber Johnson and Boveé. See p. 48.

Pneumonia with Pericarditis. See p. 47.

Pseudo-hermaphroditism. Discussed by Dr. Bovée. See p. 46.

Dr. G. Brown Miller read the paper of the evening. Subject, The Use of the Cystoscope in Diseases of the Urinary Tract in Women. Discussed by Drs. I. S. Stone and Bovée. See p. 53.

Wednesday, February 8.—Dr. T. N. McLaughlin, president, in the chair; over 50 members present.

The following cases and specimens were presented: By Dr. I. S. Stone:

1. Retroperitoneal fibroma. Discussed by Dr. D. S. Lamb. See p. 66.

2. Ovarian Tumor; Removed from Right Broad Ligament. Also Degenerated Appendix from same patient. See p. 65.

By Dr. Fry: *Fibroid Uterus.*

A widow 35 years old, with one child 10 years old. After each monthly period she was left much exhaused, as a result of menorrhagia and dysmenorrhoea. She consented to operation, then declined it, and finally, February 9, 1905, was fixed as the date for operation, with her consent. The flow began earlier than was anticipated, however, and she wanted to be operated on at once, owing to the resulting exhaustion. The right ovary was found to contain a fresh cyst; the uterus contained three well-developed fibroids, one of the sub-mucuos variety being the main cause of the symptoms. There were also numerous minute fibroids.

Dr. Henry D. Fry read the paper of the evening, the subjects being the following: 1. "Vaginal Caesarean Section; Indications, Advantages, and Technique." 2. "Tenth Case of Abdominal Caesarean Section." 3. "Two cases of Placenta Previa Occurring at the same time in Adjoining Rooms." Discussed by Drs. Moran, J. Taber Johnson, Lochboehler, I. S. Stone, A. F. A. King, and Kober.

REPORT OF EDITORIAL COMMITTEE.

WASHINGTON, D. C., *January 18, 1905.*

TO THE MEDICAL SOCIETY, DISTRICT OF COLUMBIA:

The Committee of the Society appointed to publish the Transactions respectfully submits the following report for the year 1904:

The issue of the ANNALS for January, 1905, completes Volume III and brings all the work of the Society, printed, indexed and distributed up to the end of the year 1904, except a few papers that have not yet been, and may not be, received for publication.

During the year the ANNALS was accepted at the Post Office Department for second class mail; this somewhat reduces the expense of distribution.

The receipts during the year have been as follows: From advertisements, $134.00; from subscriptions, $16.00; from sale of individual copies of the journal, $1.45; total receipts, $151.45. The increase from advertisements is 34 per cent. over the previous years.

The expenditures have been as follows: For printing and wrapping the ANNALS, six numbers, $729.06; for distributing, $60.11; for printing wrappers, $7.50; total, $797.27. Deducting receipts from all sources, this cost is reduced to $645.82. Of this sum,

however, $14.57 was for work done on the preceding volume, for which the bill was not received in time to be included in the last report; this will reduce the net cost to $631.25. This sum is $125.00 less than for the first volume, and over $100 less than for the second.

The Committee believes that the cost of publication can be further reduced by an increase in receipts from advertisements and would ask the assistance of members in this direction. It is believed that by proper effort these receipts could be increased to at least $500 a year.

D. S. Lamb,
W. A. Wells,
V. B. Jackson,
Committee.

WASHINGTON MEDICAL ANNALS.

Journal of the Medical Society of the District of Columbia.

Published Bimonthly by the Medical Society of the District of Columbia, "The Cumberland," Washington, D. C. Subscription price, including postage, $1.00 per year, in advance. Single copies, 20 cents. Advertising rates given on application.

EDITORIAL COMMITTEE.

D. S. Lamb, A. M., M. D., *Chairman*, . . "The Cumberland."
Walter A. Wells, M. D., ... "The Rochambeau."
Murray Galt Motter, A. M., M. D., . . 1815 Belmont Avenue.

Editorial.

Dr. V. B. Jackson having resigned from the Editorial Committee, Dr. M. G. Motter has been appointed to fill the vacancy

Authors of papers published in the Annals are reminded that the Society has fixed a maximum length of papers at ten pages (about 4,500 words), beyond which number the Editorial Committee is required to make a charge of $1.50 per page.

Authors of papers are also requested to have them typewritten, since the typewritten copy is much easier to read, both by editor and printer, less mistakes are made, and the publication is saved some expense.

The collaborators are requested to take notice that as the Annals is published about the first of March, May, July, September, November and January, it is desirable that their contributions for publication should be in the hands of the Committee not later than these dates.

We have to announce the death, January 15, 1905, of Dr. Henry Elisha Woodbury, once a member of this Society. Dr. Woodbury was born in New Hampshire 79 years ago ; resided more than 50 years in Washington. Graduated in medicine about 1863, but did not practice his profession for many years before his death.

MEDICAL JOURNALS AND THEIR ADVERTISING PAGES.

It will no doubt be conceded that the advertising pages of a medical journal should receive the same careful editorial scrutiny that is given to the subject matter proper of the journal itself. Where, as is the case with the ANNALS, the journal is published under the auspices and by the authority of a medical society, the responsibility of the management to the subscriber is even greater than in the case of a so-called independent journal. Perhaps it may be said that the dignity of a scientific publication is incompatible with the manifest commercialism of much advertising. True enough, so far as it goes, but it must be remembered that medicine is even more an art than it is a science, and as such its sources of supply are more diverse. Moreover, in medical journalism, as elsewhere, "money makes the mare go," and few scientific organizations, medical or otherwise, are wholly independent of the Almighty Dollar.

Under proper conditions the reader may find in the advertising pages as many timely and helpful suggestions as he finds in the contributed articles. There are, of course, many advertisements as to the fitness or propriety of which there can be no question. The chief difficulty has been with regard to patented and proprietary pharmaceutic products. Talk as we may of the ethics of the question, a large proportion of the profession has given evidence that it will prescribe what it chooses, regardless of these considerations. This phase of the question is not to be summarily dismissed. Results we must have, and the man who is in earnest will get them by whatever means offer. It is certainly unfortunate that any method or means for the relief of human suffering should be restricted by mere commercial greed. On the other hand, it must be admitted that not every preparation or combination of healing agencies can be compounded extempo-

raneously at the nearest pharmacy and in the best possible form for administration. It is worth something to be able to rely with confidence upon the means we are using, and the laborer who has given us confidence is worthy of his hire.

It is not altogether inconceivable that, through ignorance or anxiety, or both, we have been too credulous as to the claims made for many of these products. In desperation at the failure of medical science to furnish the necessary means, medical art has urged us "either to tell or to hear some new thing" for the relief of those dependent upon us. Theoretically, we resent the disposition of the manufacturing pharmacist to instruct us in modern therapy; practically, an inspection of the prescription files of almost any drug store will show that we accept their hints quite numerously.

Ten years ago the Board of Trustees of the American Medical Association instructed the editor "to accept no advertisements of medicinal preparations, the proprietors of which do not give a formula containing the official or chemic name and quantity of each composing ingredient to be inserted as a part of the advertisement." Many of us, perhaps, have thought that these very explicit instructions have been most defiantly ignored, and we may have been inclined to quote "*Meliora video, proboque, sed deteriora sequor!*" Those, however, who have read of the recent organization of the Council on Pharmacy and Chemistry (*Journal of the American Medical Association*, March 4, 1905, page 718), will be able to realize something of the complexity of the problem presented. We may expect much of interest and profit from the work of this Council; its personnel bespeaks the confidence of the whole profession. Meantime, the advertising pages of the ANNALS will be kept upon a high plane, and our readers may be assured that the management will endeavor not to be misled, either by too great regard for High Finance or craven submission to impracticable and hypocritical ethics.—[M. G. M.]

Medical Miscellany.

Pure Water Fatal to Fishes.—Bureau of Fisheries.—Recent experiments at the Bureau indicate the necessity of certain salts in water to maintain fish life. Distilled water from a tin-lined still killed salmon fry in the sac stage within 24 hours. To exclude any possible effect of the metal, tap water was distilled with glass apparatus, and the trial repeated, with much the same result. Twelve fry were used, and all succumbed within 37½ hours, the controls in tap water remaining alive. Goldfish were killed within 17 hours.

A 15-liter sample of rain water killed perch, sunfish and brook trout within 17 hours and mummichog minnows within 41 hours. A small sample of rain water caught directly in glass vessels killed salmon fry within 23 hours.

Each experiment was controlled with tap water. No lack of oxygen contributed to the death of these fishes, for the distilled water as soon as condensed contained at 15° C. more than 5 c. c. of oxygen per liter, and as used in the experiments was air-saturated, and was kept so by a constant current of air bubbling through it. Presumably death is brought about by the extraction of salts from the blood of the fishes through the gills.

—M. C. Marsh.

The Episcopal Eye, Ear and Throat Hospital.—Report of Medical Staff.—During the year 1904 there were 17,165 visits made to the hospital by 3,733 patients. Of these, 499 were admitted for operations or hospital care, being an increase of 25 per cent. over the previous year. They spent an aggregate of 4,628 days in the hospital. There were 1,049 operations performed, 455 being upon the eye, 156 upon the ear, and 438 upon the nose and throat. Eighty-seven cataracts were removed, 42 crossed eyes were straightened, and artificial pupils were made in 26 cases; 20 lost eyes were removed, in four of these cases gold or glass balls were implanted to make a better support for an artificial eye. Four eyes were removed for malignant tumors. Thirty-three operations were performed on the mastoid bone.

One hundred and seventy enlarged tonsils were removed, and 138 cases of adenoids were operated upon.

Since its opening, less than eight years ago, there have been 83,749 visits to the hospital by 16,909 patients, and 3,995 operations have been performed.

The new hospital has been a source of joy to the medical staff and a constant stimulus to their best endeavors. They wish to express to the Board of Governors their appreciation of the fact that every request made in regard to the constitution and equipment of the building was granted.

The assistants have been constant in their attendance upon the dispensary patients, and the staff extends thanks to them, and to Dr. W. P. McKee, the efficient resident physician, and to Dr. J. B. Nichols, the pathologist.

The resignation of Miss Eva Simonton, who had served as superintendent for nearly five years with such signal ability, was received with sincerest regret. Signed by Drs. W. H. Fox, J. H. Bryan, C. W. Richardson, Franck Hyatt, W. H. Wilmer and E. Oliver Belt.

New Bill Regulating the Practice of Medicine in the District of Columbia.—[PUBLIC—No. 16.]—An Act To Amend "An Act to regulate the practice of medicine and surgery, to license physicians and surgeons, and to punish persons violating the provisions thereof in the District of Columbia," approved June third, eighteen hundred and ninety-six.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section eight of "An Act to regulate the practice of medicine and surgery, to license physicians and surgeons, and to punish persons violating the provisions thereof in the District of Columbia," approved June third, eighteen hundred and ninety-six, be amended by striking out the following words: "*Provided*, That a license shall be issued upon application, free of cost and without examination, to each physician who is registered at the health office of the District of Columbia at the time of the passage of this Act, and to physicians who may change their residence to the District of Columbia from any State or Territory where medical laws and medical examining boards exist, the presentation of a certificate or license from a medical examining board, if found upon due inquiry to be true and genuine, being sufficient evidence of right to registration and certification under the provisions of this Act: *Provided*, That the medical laws and examining boards of such States and Territories grant equal rights and recognition to the licentiates of the board herein created," and by inserting in lieu thereof, after section eight, the following:

SEC. 8a. That the board of medical supervisors of the District of Columbia be, and is hereby, authorized and directed to license to practice medicine and surgery in said District, without examination, any applicant for such license who has been engaged in the practice of medicine and surgery in any other jurisdiction, whether a State, Territory, or insular possession of the United States, or a foreign country, subject to the following conditions:

"a. No applicant shall be licensed who is not of good moral character and free from mental defects and drug habits liable to interfere with the proper practice of medicine and surgery;

"b. Nor who, at the time of making application, and for not less than two years prior to the date thereof, has not been lawfully authorized to practice medicine and surgery, and actually engaged in such practice, in the jurisdiction wherein he resides;

"c. Nor unless the applicant acquired the right to practice medicine and surgery in such jurisdiction under conditions equivalent to those with which he would have had to comply in order then to have practiced medicine and surgery in the District of Columbia;

"d. Nor unless the jurisdiction, by virtue of whose license the applicant seeks exemption from examination in the District of Columbia, grants to licentiates of the board of medical supervisors of said District privileges equivalent to those which the applicant seeks;

"e. Nor until the applicant has paid to the board of medical supervisors aforesaid such fee as may be fixed and required by the regulations of said board, but not more than the fee charged under similar circumstances by the jurisdiction by virtue of whose license the applicant seeks exemption from examination.

"And said board of medical supervisors is further authorized and directed to issue in favor of its licentiates such certificates, if any, as may be necessary to enable such licentiates, without examination, to obtain licenses to practice medicine and surgery in other jurisdictions, and to collect for the issue of such certificates such fees as may be necessary to defray the cost of issuing the same and to use such fees for that purpose.

"And said board of medical supervisors is further authorized to determine all matters of fact required to be determined in the execution of the provisions of this section."

Approved, January 19, 1905.

THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA

(CHARTERED 1819 AND 1838)

OFFICERS FOR 1905

President,	T. N. McLaughlin
Vice-Presidents,	J. D. Thomas
	M. G. Motter
Corresponding Secretary,	T. C. Smith
Recording Secretary,	F. P. Morgan
Treasurer,	C. W. Franzoni
Librarian,	E. L. Morgan
Board of Censors,	H. B. Deale
	J. S. Wall
	F. R. Hagner
	J. F. Moran
	D. O. Leech
Representative of the Society as Vice President of the Washington Academy of Sciences,	S. S. Adams

STANDING COMMITTEES FOR 1905

EXECUTIVE COMMITTEE

To serve one year

W. B. French
G. Wythe Cook
C. W. Richardson

To serve two years

W. G. Morgan
G. M. Kober
J. D. Morgan

To serve three years

S. S. Adams, *Chairman*
Wallace Neff
E. W. Reisinger

To serve four years

W. C. Woodward
D. P. Hickling
Z. T. Sowers

To serve five years

G. N. Acker
E. A. Balloch
J. W. Bovée

PUBLIC HEALTH

J. W. Chappell, *Chairman*
Frank Leech — Anne A. Wilson
J. M. Wellington — Robert S. Lamb
G. W. Wood — Wm. M. Sprigg

ESSAYS

T. C. Smith, *Chairman*
D. K. Shute — E. A. Balloch

SPECIAL COMMITTEES FOR 1905

EDITING THE TRANSACTIONS

D. S. Lamb, *Chairman*
W. A. Wells
M. G. Motter

MICROSCOPY

J. B. Nichols, *Chairman*
Collins Marshall
D. W. Prentiss

DIRECTORY OF NURSES

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Ada R. Thomas
Monte Griffith

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A. F. A. King, *Chairman*
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F. P. Morgan

MILK COMMISSION

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D. P. Hickling — J. H. McCormick
J. B. Nichols — J. S. Wall

COMMITTEE ON ENTERTAINMENT

F. R. Hagner, *Chairman*
V. B. Jackson — J. D. Thomas

VOL. IV. MAY, 1905. No. 2.

WASHINGTON MEDICAL ANNALS

VAGINAL CAESAREAN SECTION, ITS INDICATIONS ADVANTAGES AND TECHNIQUE. (ABSTRACT.)*

BY HENRY D. FRY, M. D.,

Washington, D. C.

Single and multiple incisions of the cervix have been practiced for a long time, but the credit of bringing before the profession the value of the deep cervical incision or incisions is generally given to Duhrssen, although the first vaginal Caesarean section was performed by Acconci in 1895.

The chief indication for its employment and that which has mainly led to its adoption is the prompt and easy emptying of the uterus in cases of grave eclampsia. Other indications claimed are cancer of the cervix, rigidity of the os, threatened rupture of the uterus, prolapse of the funis, placenta praevia, heart disease in the pregnant woman and hemorrhage from the normally implanted placenta.

Personally, the writer entertains grave doubts regarding the application of this operation, or any method of *rapid* dilatation to the treatment of placenta praevia. The reduced maternal mortality from this serious complication is largely due to recognizing the value of *slow* dilatation. One might be tempted to employ it in a case of placenta praevia complicated by a long undilated cervix, but this condition presents the limited field assigned to abdominal Caesarean section.

If the vagina is not capacious, and if the vicious insertion of the placenta be central or nearly so, he believes better results to mother and child are secured by the classic Caesarean section.

Summing up the various indications for this new operation, we recognize its wide scope of usefulness in the treatment of grave eclampsia. It is not intended to replace the slower methods of

* Read before the Medical Society of the District of Columbia, February 8, 1905.

dilatation in less urgent cases, but when a woman is on the verge of convulsions in spite of active treatment to prevent them, or when convulsions have occurred and the uterus must be emptied rapidly. Prolonged efforts at manual or instrumental dilatation may precipitate the attacks.

That manual dilatation in itself is not sufficient to meet the situation in all cases is demonstrated by the recent impetus given to the employment of different kinds of steel dilators. Dr. Harris himself, to whom the credit of manual dilatation belongs, has brought out a very ingenious steel dilator.

The advantages of vaginal Caesarean section are, first, the rapidity with which the uterus can be emptied. From six to ten minutes is all the time that operators have reported necessary, and as they become more familiar with the technique it may be further reduced. Few operators have done more than one or two operations. Twenty to thirty minutes should complete the sewing up of the wound. There is little traumatism, and a clean surgical cut to sew up instead of leaving a lacerated surface. In eclampsia the blood resulting from the operation is beneficial, and the patient is returned to bed in the best condition to overcome toxaemia.

REPORT OF A CASE.

November 18, 1904, I was called to see Mrs. A. in consultation with her family physician, Dr. Wade Atkinson. She was about six months advanced in her second pregnancy, the first pregnancy having terminated prematurely about five years ago.

There was anasarca, and she was suffering from headache and nausea, epigastric pain and dimness of vision. These symptoms began about three weeks before my visit. The urine was solid when tested with heat and nitric acid.

I advised immediate emptying of the uterus. She was transferred to the hospital and vaginal Caesarean section performed that evening. The *os* admitted one finger but was not dilatable. Wetherill's method of "ironing" out the cervix was tried for ten minutes, but made little impression. The bladder was dissected from the cervix and held up by a retractor. The anterior lip of the cervix was bisected; the incision extended through the internal os and was three and a half or four inches long. The hand was introduced, the uterine opening dilated, podalic version performed and the infant delivered. The placenta came away natur-

ally and a hot intrauterine douche was administered. The cervical incision was then united with catgut and a gauze drain placed between the cervix and bladder.

The infant lived about six hours. From the beginning of the incision to the extraction of the infant was seven minutes.

The entire operation was completed in twenty minutes. The urine cleared up rapidly and in three (3) days there was no albumen found. All the toxaemic symptoms disappeared, and in this respect she made a rapid convalescence, except for a time she suffered from albuminuric retinitis.

Urine escaped from her vagina, and her recovery was complicated by a small vesico-vaginal fistula, which later was closed.

Technique of the Operation.—The anterior lip of the cervix is caught with two pairs of bullet forceps, placed on each side of the median line. It is drawn down and the mucous membrane incised for an inch and a half laterally at the point of reflection. The bladder is dissected off as high as the peritoneum, and a long, narrow retractor serves to elevate it and expose to view the anterior surface of the cervix. The separation of the bladder can be made with a blunt dissector or the finger, but it is safer to cut the bands of connective tissue with blunt pointed scissors, otherwise sufficient force may be employed to tear the viscus. Instead of attempting to push up the tissues in the median line it is better to work at each end of the incision in order to get under the sides of the utero-vesical ligament and sever it from the cervix. If a larger field of exposure be desired, a second incision can be made longitudinally downwards in the anterior wall of the vagina, extending from the middle of the transverse incision to near the meatus.

These points have been prominently brought before the profession by Dr. Goffe in his vaginal work on the uterus and its appendages. This dissection of the bladder may be carried at once to the point of reflection of the peritoneum, or the cervix can be bisected as the dissection progresses, bullet forceps being changed to catch each side at the angle of the cut, drawing down and exposing to view fresh cervical tissue. The cervical incision extends from the external to and through the internal os. There is not much bleeding. The instruments are now removed and the hand inserted in the vagina, the uterine opening stretched and forceps applied, or version performed.

An incision of the posterior lip will not be required ordinarily, unless the infant be large. After emptying the uterus the cervix is caught with bullet forceps on each side of the incision ; it is drawn down and the retractor inserted to hold up the bladder anteriorly. The incision of the cervix is closed with catgut, and the vaginal wound sewed up. Some recommend a gauze drain between the cervix and bladder.

If there should be too much bleeding from the uterine cavity a gauze packing can be inserted. In cases of eclampsia a certain amount of hemorrhage is beneficial unless the patient is too much exhausted.

Dr. Moran related two cases of eclampsia which he had recently treated by vaginal Caesarean section. The first was a primipara referred to him by Dr. Stone, December 2. She was fully under the influence of morphine and had received the usual treatment. After consultation, the patient having had eight convulsions and the os being undilatable, vaginal Caesarean section was decided upon. The operation was performed as described by Dr. Fry, the only difference being that delivery was effected by the forceps and not by version. The patient stood the operation well, but was in a state of coma all the next day, probably as a result of the morphine which had been administered, as well as of the toxaemia. She became violent and had to be restrained by straps. Food was withheld for twenty-four hours, and calomel, one-quarter grain, was given every fifteen minutes for three hours ; nitroglycerine, m. 1-100 every four hours hypodermatically, and high salt enemata were administered. About twelve hours after operation the kidneys acted well, the anasarca disappeared and the patient completely recovered. Albumen persisted in the urine for about a month. The child died of toxaemia at the end of thirty hours.

The second patient was also a primipara, received in the hospital at 5.30 o'clock December 25. She had already had eight convulsions, and, as they continued, Dr. Fry was called in consultation at 7.30. Operation was decided upon and performed at 9 o'clock. The woman by that time had had sixteen convulsions and was in a state of coma. It was interesting that in this case the pulse at no time exceeded 72. It was usually believed that when the pulse rate was low convulsions did not occur, but this was not the case here. She was given one-fourth grain morphine at first, and showed the physiological effects promptly, the respirations dropping to 12. Delivery, as in the first case, was effected by the forceps. She was violent for several hours after the operation, longer than in the first case. The same after-treatment was employed. She responded in twenty-four hours, recovered, and left the hospital a week after with but a trace of albumen in her

urine. During the operation the bladder was punctured, and after delivery was accomplished this was closed with catgut sutures. There was a leakage of urine for several days, but the wound healed perfectly and gave no subsequent trouble. The child died of asthenia at the end of eight hours.

Both of these patients were in the sixth or seventh month of pregnancy. He concurred with Dr. Fry as to the indications for the operation, especially in primiparae. All were aware of the dangers and difficulties attending rapid dilatation of the cervix before effacement of the internal os; hence, in primiparae, when this condition was present together with coma and convulsions, this operation should take precedence over present methods. In multiparae the method was that of election.

Dr. J. Taber Johnson said that he had been much interested in the published accounts of this operation as described by Dr. Fry, and in talking with the latter had gained the idea that the operation was performed much oftener than it really had been. So in a recent examination for candidates for license to practice medicine in this District Dr. Johnson inserted a question as to the advantages of and indications for vaginal Caesarean section. All the candidates said that they had never heard of it, and described the method of performing abdominal Caesarean section, and he was obliged to give credit for the reply. As a matter of fact, while one or two authors briefly referred to it, it was not described in the text-books. Nevertheless he believed that the operation was a distinct advance over older methods. If one could succeed in delivering in six or seven minutes a fetus through a long and undilatable cervix, with the woman in convulsions, and deliver a living child from a living mother, the operation could not be regarded otherwise than as a great advance. In neither of Dr. Moran's cases was the child viable; hence its death could in no way be counted against the success of the operation. In two or three other instances the method had proved of value—where women had been threatened with death from cardiac disease or other affections during labor; it shortened the labor and materially augmented the patient's chances of recovery. In all such cases mistakes were sometimes made, and different opinions were expressed as to indications, etc.; but eventually a unanimity of opinion would prevail as to proper and wise indications, and the operation would be put upon a firm and permanent basis. All those with experience would recollect that efforts to dilate the cervix so as to effect delivery almost always resulted in additional convulsions, and each one lessened the patient's chances. Hence any method which brought about a rapid delivery was a distinct advance. He was much pleased that Dr. Fry had brought the subject before the Society.

The technique was very simple. It had been said that the operation was difficult, and that it could not therefore be per-

formed in the country or where there were no specialists. It was true that it took an expert to do an abdominal Caesarean section well, but any practitioner who had had ordinary experience in gynecological work should be able to do this operation.

Dr. Lochboehler asked Dr. Fry how the placenta was removed immediately after the child was extracted; by expression?

Dr. I. S. Stone said that the matter of injury to the bladder needed but a few remarks. An accidental puncture in the course of an operation gave him no apprehension, as the wound almost invariably responded promptly to suturing. The bladder was not infrequently wounded in operations upon adjacent structures, *e.g.*, in symphyseotomy, and here the injury was very difficult to repair. Such wounds, however, when properly sutured, very rarely gave rise to evil consequences. He was much pleased with the operation as described by Dr. Fry. It had impressed him from the very start. In eclampsia one could not succeed by the ordinary means, as Dr. Johnson had said, especially with Barnes' dilators; they often ruptured and were not satisfactory.

Dr. A. F. A. King said that we almost always learned something practical and valuable from Dr. Fry's papers. He was much interested in all that the present paper contained. Nevertheless, Dr. Johnson's remarks were very important. It was certainly true that an operation which could only be performed by the skilled surgeon was not as valuable to the world at large as it might be. Dr. Johnson and Dr. Fry might well speak of this operation as a "simple" one, but there were thousands of obstetricians throughout the United States who would not dare to attempt it, and, if they did, the results in many instances would prove disastrous. It was therefore unfortunate that it could be used in only the minority of cases. Many patients were, by reason of existing circumstances, denied the services of skilled operators. In instructing the students Dr. King was obliged to teach two kinds of obstetrics: one for the specialist, the surgeon, and the other for the general practitioner, who would not, in all probability, undertake surgical cases. As an example, he mentioned the treatment of abortion, the expectant method by packing, etc., as contrasted with instrumental removal of the uterine contents. Abdominal Caesarean section was a simple operation, and any physician should be able to perform it without hesitation, especially when we remembered that among the ignorant it had been successfully done in emergency by the husband or other person having no knowledge whatever of surgery. Vaginal Caesarean section, however, was not such a simple operation, and he believed that its field of usefulness would always be restricted on this account.

Dr. Fry spoke of the danger of rupture of the uterus; he was obliged to give up version on account of the thinning of the lower uterine segment, and decided that Caesarean section or craniotomy

was the only operation permissible. Now was vaginal Caesarean section allowable in this thinned portion of the uterus? Could the thinned segment be satisfactorily united?

Dr. Kober agreed with Dr. King that such operations could best be done by skilled surgeons—yet everyone must make a beginning, and the preliminary training in anatomy, operative surgery and all branches of medicine and surgery today was far better than formerly. While it was best to entrust this operation to a skilled surgeon, under ordinary circumstances, if such a man could not be obtained, any young obstetrician, in his opinion, could be trusted to do the operation properly. Caesarean section itself was not a formidable operation. Native "medicine men" in darkest Africa had performed it time and again, as shown by an interesting chapter upon this subject in Max Bartel's "Medicine and Surgery Among Primitive People:" the incision was made with a knife shaped somewhat like a sickle, and the results appeared to have been good. Hence he was not disposed to endorse the sentiment that our young men should abstain from such operations. They had more moral courage than the young men of any other country, and with our present system of operative courses on animals they were fully equipped to undertake such a life-saving operation.

Dr. King explained that he had not intended to give the impression that young men could not be trusted to do vaginal Caesarean section; he believed that many of them were better fitted to do it now than older surgeons of years ago. As a matter of fact, young graduates sometimes undertook operations now-a-days that older surgeons would never have attempted twenty-five years ago. But there were many obstetricians, old and young, who never did much surgery, and such men would not be likely to attempt an operation like vaginal Caesarean section.

Dr. Kober said he meant that if a young man never did his first operation he would never do a second, and eventually there would be no skilled surgeons.

Dr. Fry, in closing the discussion, thanked those who had entered into it. In answer to Dr. Lochboehler, he stated that the delivery of the placenta was effected in the ordinary way, by expression. In reply to Dr. King, he said that in the presence of a marked thinning of the lower uterine segment, forceps should be used to effect delivery unless for any reason they were contra-indicated, in which case vaginal Caesarean section could be employed. In his experience the edges of the wound had healed kindly. The chief complication was wounding the bladder, and in this connection he had learned a valuable lesson recently, pushing up the bladder from the angles, not the center, of the wound, thus exposing the utero-vesical ligaments in the median line. In the case that he had reported he had been most careful to avoid this accident, and was much surprised to learn that he

had wounded the bladder after all. Aside from this, the operation required but little skill, and any operator should be able to do it.

More harm was done by the application of forceps by incompetent men than in any surgical operation. Every practitioner felt perfectly competent to apply the forceps; they were inserted more or less at random, without any accurate knowledge as to the position of the child, and as a result the child was killed or injured, the uterus ruptured, the perineum torn or some other lamentable injury done. Some of this confidence might well be applied to the operation of Caesarean section. Vaginal Caesarean section was also applicable to save the child when the mother was dying. He related a case of pernicious vomiting at the seventh month. Last Saturday he believed the woman to be dying, and the question arose whether to perform vaginal or abdominal Caesarean section. An objection was the lithotomy position in a dying woman. Here the woman was apparently dying when Caesarean section was performed. Salt solution was freely used, and happily she survived the operation.

CASES OF SHOT INJURY OF SPINAL CORD WITH PECULIAR SYMPTOM.*

By WM. P. CARR, M. D.,

Washington, D. C.

Man, brought to Emergency Hospital. Was shot in the neck about three years ago. He was completely paralyzed and had complete loss of sensation below the upper part of the chest. He could contract the pectoralis major and deltoid, the supinators and pronators of the forearms, and had slight movement in all the fingers except the little finger. Could feebly flex and extend the wrist. Had sensation on the radial side of arm and hand but not on the ulnar side. On the dorsum of the hand sensation was good on the radial side of the middle finger, slight on the ulnar side of the middle finger and was totally absent from the little finger and the ulnar half of the ring finger. These symptoms showed that the ulnar nerve was completely paralyzed, the median partly paralyzed and the radial nerve unaffected, and definitely located the lesion at the origin of the seventh cervical nerve, which is opposite the sixth cervical vertebra.

A skiagraph was taken and showed plainly a large hole through

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the center of the body of the sixth cervical vertebra, while the bullet, which had gone slightly downward, was lying under the skin of the back of the neck opposite the seventh vertebra.

The interest in this case lies in the fact that although the cord was completely severed in the cervical region, as was shown by both symptoms and skiagraph, it subsequently developed that the man had acute sensation in the penis. This was discovered when he was catheterized. The resident physician told me that the patient complained of pain when catheterized. I could hardly believe it; but upon examining him carefully I found, to my surprise, that he had acute sensation in the head and outer half of the penis on both sides, and absolutely no cutaneous sensation in any other part of his body below the nipples. There are but two ways of accounting for this phenomenon. Either a few nerve fibers in each side of the cord had escaped injury, and these uninjured fibers on each side were distributed to the penis, and nowhere else, or else part of the sensory fibers from the outer half of the penis reach the brain by some route outside of the cord or join the cord above the sixth cervical vertebra.

The first explanation seemed very improbable, and has since been disproved by another somewhat similar case in which a fracture of the vertebrae in the dorsal region practically mashed the cord in two. This man had total loss of sensation in all parts below the waist except in the head and outer half of the penis. The sensation in this case was not so acute as in the first, but was well marked.

From observation of these two cases it seems certain that some of the sensory fibers from the penis pass to the brain by some other route than the spinal cord; at least they do not pass through that portion of the cord below the sixth cervical vertebra.

There are only two other routes possible—the sympathetic and pneumogastric nerves. The prostatic plexus of the sympathetic consists of nerves of large size massed at the sides of the prostate and having numerous small ganglia developed in its meshes. This plexus furnishes branches to the prostate and seminal vesicles and gives off the large and small cavernous nerves to the penis.

The small cavernous nerves pierce the triangular ligament and enter the posterior part of the corpora cavernosa. The large cavernous nerves also pierce the triangular ligament and run forward, one on each side, to the middle of the penis, where each

nerve anastomoses with the dorsal nerve of the penis of the corresponding side, and ends in twigs which are distributed chiefly to the corpus cavernosum. But some of the terminal filaments also supply the corpus spongiosum. In the female similar nerves of much smaller size supply the crura of the clitoris.

Some of the sensory nerves of the skin of the outer half of the penis must travel by way of the cavernous nerves to the prostatic plexus and thence up the sympathetic trunk, finally joining the cord high in the neck or passing into the sympathetic and through that nerve reaching the brain. There seems to be no other possible explanation of the phenomenon observed in these two cases.

Dr. J. Ford Thompson said that he had twice performed the operation of laminectomy in the cervical region. Operation was of no avail when the cord had been severed, and under these circumstances one should not operate. Laminectomy should be done oftener than it was. In neither of his cases did he encounter any difficulty. The first patient was brought from Virginia, where he had been wounded several weeks before. He was entirely paralyzed. The cord was found to have degenerated, and the man died shortly after the operation. The trouble was that we did not operate soon enough in these cases. The second patient was shot in this city, the ball lodging in the body of a cervical vertebra, and Dr. Thompson was unable to find it. He removed the depressed laminae, but the operation was of no avail.

He had seen two or three instances of cervical injury caused by diving into shallow water ; two of these accidents happened at a swimming school here. None of the patients were operated upon, and all eventually died. Complete paralysis indicated a serious case, and operation should be performed at once. The results would never be as satisfactory as in operations upon the skull, however, as the injury in spinal cases was so much greater. Sometimes a lamina was merely depressed, and raising it was all that was necessary to effect a cure ; or a bone pressing upon the side of the cord could be raised, thus relieving the pressure. While the mortality was great, interference offered much more hope than non-interference. The operation itself was simple.

Dr. Carr endorsed Dr. Thompson's statement that all fractures of the spine, whatever the cause, should be operated upon at once, because pressure of only a few days' duration very much lessened the chances of recovery of the cord. Dr. Carr had operated in several cases, but in each instance the damage was so great that the operation was of no avail. In a recent case he had found absolutely nothing, although he explored the spine for six inches up and down. The patient recovered from the operation, but the paralysis remained as bad as ever. He had seen a dozen other

instances in which operation was performed promptly, but no good resulted; yet he believed that this was the only thing to do. In the second case which he had reported the cord was reduced to the condition of pulp; it was entirely severed so far as nervous tissue was concerned.

TWO CASES OF TUBERCULAR PERITONITIS; OPERATION.*

By J. FORD THOMPSON, M. D.,
Washington, D. C.

Both patients were operated upon on the same day. The prognosis was favorable, as in each case the peritonitis was of the ascitic, not the dry, variety. Some authorities claimed that in the cases of tubercular peritonitis, where there was an accumulation of fluid, 75 per cent. of the patients would be saved by simply opening the abdomen. This fatal disease should be considered from every point of view. Surgery had recently been getting ahead of medicine in this line; while the physician saw most of the cases of pulmonary tuberculosis, the surgeon saw more of tuberculosis elsewhere in the body, and in patients of all ages. It seemed to him that one-half of his work was upon tubercular patients.

Here we had a common form of the disease, affecting the peritoneum. Infection probably arose from the intestines or other abdominal or pelvic viscera. The condition was often cured by the method about to be described. Heretofore it had been his custom to flush out the peritoneal cavity and employ drainage by a tube or gauze, and under this treatment the patients had done tolerably well. He had never tried merely filling the cavity with oxygen or air. The best method seemed to be to open the abdomen, examine the parts carefully and flush out the cavity with gallons of normal salt solution, leaving in as much of it as could be retained, and closing the wound entirely.

Both these operations were performed two weeks ago, and both patients were children. In one the abdomen was so enormously distended and there was so much interference with breathing that he was compelled to operate at once, using the method just described. But while relief was immediate, and the patient con-

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tinued to be comparatively comfortable, there was a rapid reformation of the fluid, and a few days ago he had to insert a trocar in the lower angle of the wound and again irrigate. The boy was now very ill, and the result was uncertain. In both cases he made the incision as small as possible ; it would admit two fingers, and through it he examined the abdomen as well as he could. He detected some mesenteric glands, but in neither case did he observe the studding over of the peritoneal surface with tubercles ; the membrane was merely red and puffy. In the larger boy such a large roll of peritoneum appeared at the incision that it was some time before he could tell whether the mass was a knuckle of intestine or peritoneum. The smaller child had a fair chance of recovery. Just above the umbilicus the peritoneal surfaces were all agglutinated, and the adhesions were so strong that he could not break them up. There was much fluid in the lower abdomen, so that the case was a favorable one for treatment. He had expected to operate in another similar case in a child, but the parents refused to give their consent.

Statistics showed that this affection was very amenable to surgical treatment. If the condition was local and primary the prognosis was favorable. It was remarkable that merely opening the abdomen had such a beneficial effect. Exactly what cured the patients was not known, but the most plausible explanation appeared to be that the manipulation attendant upon the laparotomy and examination of the abdominal contents set up a congestion of the vessels of the peritoneum, bringing to the diseased area an extra supply of blood with the antitoxins which had been forming in it during the previous course of the disease. This was the only theory which in his opinion was tenable. It was known that blood serum did have this remarkable curative effect. It was therefore best not to operate too soon. He related instances in which merely opening the abdomen and examining its contents had been followed by complete recovery of the patients. One such case was that of a woman whom he saw in consultation at the Garfield Hospital. She was so low that it was agreed that operation was inadmissible ; she could hardly move. Subsequently, however, she rallied somewhat and insisted upon an operation. He therefore did an exploratory laparotomy over the gall bladder ; a tumor presented at the opening, and all present thought that it was a malignant growth ; a radical operation was not to

be thought of on account of the low condition of the patient, so he merely closed the wound. The woman recovered, was now living, and was the mother of three children. A couple of years ago he examined her again at the request of Dr. Mary Parsons, with negative results. When the peritoneal disease was secondary to tuberculosis elsewhere in the body, however, surgical treatment was only palliative.

Dr. Snyder said that the subject recalled to his mind a case in which he operated for incarcerated hernia a number of years ago. Upon opening the sac much fluid escaped, disclosing tubercular peritonitis. He completed the hernia operation, and then opened the abdomen and flushed out the peritoneal cavity as described by Dr. Thompson; a large glass drainage tube was left in the wound, and for a day or two the flushing was repeated. The man recovered rapidly, and three years afterward was in perfect health.

Dr. Carr said that several years ago he had a case which illustrated the benefits of opening the abdomen in tubercular peritonitis. The patient, a colored woman, was sent to him for appendicitis. Examination disclosed a tumor somewhat like a cocoanut in shape; he believed it to be a fibroid of the uterus, and began to do a hysterectomy. Upon opening the abdomen, however, the intestines were found to be all massed together, and he thought the case was one of sarcoma of the uterus. With much difficulty he separated the adhesions, and finally came to a mass of gelatinous matter in the center. The tumor was thus unravelled, and the true nature of the trouble, tubercular peritonitis, was evident. The woman recovered completely, and a year afterward was perfectly well.

The accepted explanation was that the interference caused a great leucocytosis and a great increase in the hyaline cells of the peritoneum itself; the latter were active phagocytes, and they protected the peritoneum against infection more than all other cells. Hence, he had always thought it best not to wash out the cavity if it could be avoided. Theoretically, the best method was merely to open the abdomen and wipe the peritoneal surface, in order to set up a reaction, and then close the wound; if there was a reaccumulation of fluid a trocar could be inserted and the cavity washed out. Drainage at the first operation was contraindicated: 1. Because it was not desirable to get rid of the cells above referred to. 2. On account of the danger of setting up infection through the tube. 3. On account of the danger of causing adhesions.

Dr. J. Taber Johnson said that he had had some experience with tubercular peritonitis when it was secondary to pulmonary tuberculosis, but the results had not been good. When, however, the peritonitis was caused by extension of the disease from some

other structure, as, for instance, a tuberculous ovary or tube, the removal of the offending member gave remarkably good results, so far as cure was concerned. At first he used a glass drainage tube, but the results were not as good as when he merely opened the abdomen and let in the air, and manipulated the abdominal contents in order to find out what the conditions were. He usually found nothing, and the patients got well, often to his great surprise. Lawson Tait had remarked to him his own surprise at the results which he had obtained in the same way by merely opening the abdomen and closing it again; even the patients to whom he had given a bad prognosis recovered. J. William White also publicly expressed his surprise at the same phenomenon. Dr. Neff, in a recent paper in the Symposium on Tuberculosis, said that the beneficial results were evidently due to "sunlight and the will of God," and he had settled on this as being the best explanation so far presented. Dr. Carr's theory, however, was a good one; according to this explanation it was best not to employ drainage. Dr. Johnson had had no experience personally with operations for primary tuberculosis of the peritoneum, but he had several times seen Dr. Moran remove tuberculous glands from the cavity. Dr. Moran believed that their removal very much lessened the chances of the development of the disease in their neighborhood.

Dr. Mitchell said that one of the most mysterious things in surgery was the beneficial result which follows merely opening and closing the abdominal cavity in cases of tuberculosis of the peritoneum. How it did good was wholly unknown, but there was no question that it did produce wonderful results. He had seen many instances of this. He always explored the peritoneum, mopped out the fluid and rubbed iodoform on the peritoneal surface; he had always believed in the efficacy of iodoform in local tuberculosis. Anyway, whether it was due to the manipulation or the iodoform, the patients did well. The distribution of the inflammation was striking; in some cases the tuberculosis was general, and in others it was limited to a very small area of peritoneum. He had seen two instances where it was confined to a hernial sac; the operation for the hernia cured the tuberculosis. Fitz recently read a paper in which he classified the different forms of the disease, and limited the good results principally to the milder cases—those in which the tubercles were scattered—not massed together; the latter cases were most serious.

The origin of the tuberculosis was not infrequently found to be a diseased mesenteric gland; he had seen several such cases. Intestinal obstruction had resulted from tuberculosis of the peritoneum. The character of the fluid had much to do with the severity of the case and the prognosis; a clear fluid indicated a mild case; the presence of fibrin made the case serious; and the

worst cases were those in which there was pus, or a matting together of the intestines. He had seen instances in which the disease was limited to a small area which was separated from the unaffected portion of the peritoneum by a distinct membrane.

Dr. Shands said that the results of the surgical treatment of tubercular joint disease bore out what had been said. In tubercular synovitis the mere opening of the joint and flushing it out, and draining by a tube through the joint and washing it out with salt solution on successive days, effected a cure. Almost every such case did well.

Dr. Acker said that these children were in his service at the Children's Hospital, and Dr. Thompson had operated upon them at his request. He believed that the result in each case would be good. Operation was indicated when there was no pulmonary disease, and other treatment had proved of no avail. He had been much pleased at the result of Dr. Thompson's operations on his patients. He related one instance, an abdominal case, in which the liver was very large; an exploratory incision was made, but nothing was found; yet the boy left the hospital cured. It was never known what had been the matter with him.

THE PAN AMERICAN CONGRESS IN PANAMA AND THE AMERICAN PUBLIC HEALTH ASSOCIATION IN HAVANA IN JANUARY, 1905.*

By B. ROSALIE SLAUGHTER, M. D.

Washington, D. C.

When it became apparent that we could not reach the Fourth Pan American Medical Congress in time for the opening session, it was decided to have an opening meeting on board our steamer. Dr. Ramon Guitéras, of New York, called the meeting together, and a welcoming address was made in Spanish by Dr. José Ramos, the official delegate from Mexico, who, for the time being, impersonated President Amador of Panama, and extended to us a most cordial greeting.

Everybody entered into the spirit of the hour, and Dr. W. W. Keen, of Philadelphia, impersonating Major La Garde, Dr. A. E. Macdonald of New York and Dr. W. B. Chase of Boston, made exceedingly witty speeches.

The following day *i. e.*, January 4, Dr. Guitéras called a serious meeting; the principal paper was presented by Dr.

*Read before the Medical Society of the District of Columbia, March 22, 1905.

Seneca Egbert, Dean of the Medico-Chirurgical College of Philadelphia, on "Typhoid fever in Relation to the Rural and Urban Populations of the United States."

Dr. Egbert said that his attention had been called to this by the tables and maps in the U. S. census report on vital statistics for 1900, which show for each division of the U. S. the proportion, in that year, of deaths from typhoid fever per 1,000 deaths from known causes. The paper showed a thorough study of the situation, and a far higher death rate from typhoid fever in the rural than in the urban population. In explanation of this rather surprising condition, he called attention to the fact that in the large cities much attention has been given to the water supply and the drainage systems, while in the country an unhygienic condition is often present, and in compiling the rural statistics all towns of less than 8,000 inhabitants are included.

In the discussion which followed the reading of the paper, Dr. Joseph McFarland, of Philadelphia, said he regretted that the paper did not include the study of flies in their relation to the disease, as the greater number of flies in the country afford greater opportunity for transmitting infection in this manner. Dr. A. E. Macdonald called attention to the fact that many cases of typhoid fever in cities, owe their origin to residence during vacation in suburban or rural districts, although the development of the disease does not take place until after the return of the patient to the city; for instance, in New York, typhoid fever is conspicuously an autumnal disease.

Dr. W. Sohier Bryant, of New York, joined the discussion by saying that the city has the minimum of liability owing to the co-operation of many individuals to provide unpolluted food and drink, and public sentiment requires cleanliness in personal habits, whereas in the country there is an isolation of ignorant individuals who must depend upon themselves for any freedom from pollution in food or drink. He also emphasized the importance of flies in the spread of typhoid fever, which increases in proportion to the carelessness of the population in matters of the toilet. Dr. Bryant referred to an epidemic during the summer of 1898, when, as brigade surgeon, he had charge of a portion of the 7th Army Corps, at Jacksonville, Fla. One regiment appeared to be infected nearly to a man; the cause was clearly due to flies; the influence of other factors was eliminated, as all the water was

piped from the city of Jacksonville, which is supplied by deep artesian wells, and the milk supply was from many widely separated sources.

Dr. Egbert, in closing the discussion, said that while the statistics were probably affected by the greater number of patients who recover in the cities, this is more than offset by the fact that many rural cases are not correctly diagnosed, and are therefore not reported as typhoid fever. In regard to flies, he said: "They are probably important agents when large bodies of men are grouped together and have kitchens, mess tables, sinks, etc., in common." He quoted Prof. Geo. G. Groff, of Bucknell University, who, as a member of the superior board of health, was in Porto Rico immediately after the Spanish-American war, and reported that typhoid fever was a rare disease in the Island until the soldiers came in with horses and the accompanying flies; numerous cases were soon reported. When the soldiers and horses left, flies became exceedingly scarce, and since then there have been but few cases of the fever on the island. The paper, illustrated by maps and charts, will appear in *American Medicine*. Mr. Lees, a young man from Philadelphia, demonstrated an appliance which he had invented and named "the posture retainer," the purpose of which was to prevent patients from lying on their backs. The meeting of this floating section was then adjourned until the following day, it having been facetiously remarked that since floating kidneys and floating cartilages were recognized, we would call ourselves the floating section of the medical body.

January 5 the exhibition of a surgical chair by Dr. Allen, of Baltimore, of several nebulizers and vibratory machines by Mr. Stevens, of Philadelphia, and of a clever adaptation of the phonograph to test the sense of hearing by Dr. W. S. Bryant, of New York, preceded the reading of the papers. Then Dr. J. W. Putnam, of Buffalo, read a valuable paper on "Paranoia, as it relates to homicide," and cited some remarkable cases. He declared himself in favor of "the perpetual confinement of a paranoiac who had committed murder, as the disease is chronic and incurable, tending with the lapse of years to dementia." I regret that time will not allow me to report the paper in full; it was published in the *Buffalo Medical Journal* of February, 1905.

Dr. W. W. Keen reported a case of hour-glass stomach, the

result of an ulcer on the lesser curvature, which produced a septum from the anterior wall of the stomach. He performed a gastro-gastrostomy, which resulted in the recovery of the patient in three weeks, and a gain of nine pounds in the twenty-two days following the operation. The hour-glass stomach is sufficiently uncommon to make each case interesting, and when the patient falls into such able hands as those of Dr. Keen the operation is sure to be a brilliant success and the details of it of especial interest to our profession. The paper will be printed in full in the *Therapeutic Gazette.*

Dr. Keen showed us a specimen from a case which he intends to report later, that of a child who when a few months old fell into the fire and lay with its head on a bed of glowing coals for at least half an hour. The parietal bones sloughed off whole and Dr. Keen exhibited them. He also showed us a photograph of the child, who is now 14 years old. There has always been an area of unhealthy tissue on top of the head, but the brain has been partly protected by the growth of the squamous portion of the temporal bone, exceeding its usual boundaries on account of not having the limiting pressure normally exerted by the parietal bones. The boy is deficient mentally, but has grown to the usual stature of a child of 14.

Dr. D. A. Shirres, Professor of Neurology in McGill University, Montreal, Canada, read a paper on the regeneration of the spinal cord and cited a number of cases which had come under his surgical care, and in which the results had been extremely satisfactory.

Dr. Joseph McFarland, in discussing this paper, said that he had considered the insertion of a portion of spinal cord more a matter of scientific interest as a biological curiosity than a measure to recommend in therapeutics, and that he considered it remarkable that such results as Dr. Shirres had described had been attained. He thought that in view of the complex structure of the spinal cord it was illogical to expect complete restoration, especially where considerable lengths of the cord had been lost.

Dr. Shirres' paper went into the subject very fully and scientifically, as is suggested by its title, "Regeneration of the Axones of the Spinal Neurones in Man." It will be published in the April issue of the *Montreal Medical Journal.*

We reached Colon about 11 p. m. January 5; the entire party

having each taken six grains of quinine daily, as a prophylactic measure during the preceding week, we felt ready to brave malaria, and the report of yellow fever in Panama City did not deter us. The following morning we went ashore, and, after a hasty glimpse of Colon, boarded the special train which was provided by the generosity of the Panama government to take us to Culebra. We had two excellent views of the canal cut, one from the highest point on the northern side of the future canal and the other from the lowest. Colonel Gorgas and Mr. Dauchey pointed out all the interesting features and outlined the plans under consideration.

Dr. Bell, of the Navy, entertained us at luncheon on the hospitable veranda of the officers' quarters of the barracks on the hill overlooking Empire, and at three o'clock we continued our journey to Panama City. The railroad trip from Colon to Panama, that is from the Atlantic to the Pacific, takes two hours, and stops at twenty-six towns.

President Amador and his Secretary of State received us at the Palazzio with charming courtesy shortly after our arrival, and expressed many regrets that our steamer should have been delayed. That night the scientific section was called to order at 8.45 P. M. Dr. Julio Icaza, the chairman of the National Executive Committee, presided and welcomed the American and Mexican delegates in a few cordial words.

Dr. José Ramos, of Mexico, Dr. Keen, of Philadelphia, Dr. Martinez, of Cuba, Dr. Azurdia, of Guatemala, Dr. Biffi, of Peru, Dr. Cordova, of Honduras, and Dr. Echeverria, of Costa Rica, made short addresses.

Dr. Hughes, of St. Louis, read a paper on the "Care and Cure of Epilepsy." He claimed that in many cases it could be listed with the curable diseases, and reported ten cases he had had under observation for 25 years, in which there had been no recurrence. He said that in treating epilepsy he always demanded an agreement that the patient should be under his control for two years, during which time he kept the individual's general health in the best possible condition.

Dr. A. E. McDonald, of New York, moved that the papers read and the discussions held during the meetings on board the S. S. Athos should be entered on the minutes of the congress as part of the regular transactions. The resolution was adopted by a vote of 23 to 7.

Papers were then read by Dr. Biffi, of Lima, Peru, on the "Permeability of Filters to the Protozoa of Water," and by Dr. José Ramos, of Mexico, on the "Suppression of the Plague in that Country in 1900." The meeting adjourned, and Mr. Barrett, the American minister, entertained the members of the congress at an informal and delightful reception.

The final meeting of the congress was called at 8.45 the next morning. Dr. Ramos presented a paper on "Trachoma in Mexico," an outline of which will be found in the *Medical Record* of February 11. Dr. José E. Calvo, the Secretary General of the congress, read by title the papers which had been read on board the Athos and those of other authors who had no opportunity to present their communications. Dr. Obarrio reported the action of the secretary and treasurer of the local committee. Dr. Icaza then announced the congress adjourned.

Dr. Ramon Guitéras called a meeting of the executive committee, and resolutions concerning the programme for the next meeting of the congress in Guatemala, 1908, were adopted.

The great generosity of the Panama Government for the entertainment of the fourth Pan-American Congress cannot be too fully appreciated; $12,000 gold was set aside for this purpose, and a single trip, that to Toboga Island, which we unfortunately missed, cost $500. The Panamanians individually devoted themselves to their guests. The ball and banquet and various entertainments which we missed were all conducted on the most liberal scale, and nothing which could have been done for the pleasure of their visitors was omitted.

A Panama breakfast was arranged especially for us at the Hotel Grande Centrale, and we were very much interested in the variety of delicious native dishes which composed the menu. Doctor Amador, president of the Republic of Panama, who was a practicing physician on the isthmus for many years before he was made president, sat at one end of the table, and Doctor Icaza sat at the other. Many distinguished Americans who are living in Panama were present, and the breakfast was unquestionably one of the most delightful features of our trip.

The balmy summer weather, the artistic buildings in and near the city, the exquisite tropical vegetation and picturesque villages along the railroad made the trip one of rare interest. The courtesy of the officers of our Army and Navy and Marine Hospital service

added to our pleasure at every turn, and we spent some interesting hours at the large, beautifully situated and well equipped hospital of Ancon, in the suburbs of Panama City.

There were several cases of convalescent yellow fever, well protected by wire mosquito netting, fastened to frame work, which formed a sort of room at one end of the ward. We also saw several cases of profound tropical anaemia and one of Peruvian warts; those were the only unusual cases in the hospital. With this hospital, under the able superintendence of Major La Garde, of the Army, and the smaller hospitals at Nuraflores, Culebra, Gorgona, Bahio and Colon, under the charge of highly competent medical officers; with the isthmus guarded against imported disease by such capable men as Dr. H. R. Carter and his assistants, and the task of putting the canal zone into a healthy state in the hands of a man of such integrity and experience as Col. William C. Gorgas, who, by reason of his successful work in ridding Havana and Cuba of yellow fever and malaria, is peculiarly fitted for this most important work, we have every reason to expect that in a short time the isthmus will be in a thoroughly healthful condition.

Col. Gorgas, at one of the meetings of the congress, which took place before we arrived, read a paper in which he set forth the sanitary problems which lay before him and his associates and the plans by means of which they expected to solve them. The paper was of the greatest interest, and has been published in the *Medical Record* of February 4, 1905. That he will accomplish his task is a foregone conclusion in the minds of all those who have known of Col. Gorgas work in the past, provided the many difficulties which are put in his way by the commissioners can be overcome. For a stirring account of the way in which he and his associates are hampered read the article called "The Panama Canal Mismanagement," by Dr. Charles A. L. Reed, which has just appeared in the *Journal of the American Medical Association*, March 11, page 812.

General conditions in Panama seemed promising. Mr. Tracy Robinson, an American who has lived there for many years, said in the delightful historical sketch of the various canal projects which he delivered at the opening session of the Congress (and which I have since had the pleasure of reading) that there had been "no real progress on the Isthmus for the last 30 years,"

for no man knew in planting his crops who would reap them, "the number of revolutions or disturbances of the public peace during the last 50 years has been at least half a hundred. As the daughter of a turbulent mother Panama has no cause to love Colombia."

With the proclamation of the Republic on the 3d of November, 1903, peace under the protection of our Government is assured, and here and there little farms have sprung up. The best are under the thrifty care of the honest and industrious Chinese, and when more of the land is under cultivation the cost of living will be very much reduced, for at present nearly everything is imported from the States, and the retail price of provisions is almost double what it is with us.

After five days at sea we reached Havana on January 12, to find that the ship which had preceded ours from Colon, had arrived at Havana with three cases of yellow fever on board; our anxiety lest we be quarantined was dispelled by Doctors Ponce de Leon and Dominguez, who, after taking our temperatures and finding they were normal, said that, because we were physicians and the guests of the Government, an unprecedented thing would be done in allowing us to go ashore, provided we would report daily to have our temperatures taken; and even this became unnecessary, for in order to save our time the health officer considerately called upon us before breakfast each morning.

The Havana harbor is the most picturesquely beautiful in the world, with its medieval castle and fortress towering on one side and the beautiful modern city lying on the other.

The launch in which we were landed steamed close to the wreck of the Maine, and we found Cuban courtesy awaiting us at the custom house, where baggage was passed without inspection.

We noticed in the stern of the health officer's launch a small space containing a cot and surrounded by wire mosquito netting, the wires 18 to the inch, and learned that this room is used in carrying yellow fever and malaria cases from the ships to the quarantine hospital.

Dr. Finlay, Dr. Juan Guitéras, and other Cuban physicians, have carried on the work inaugurated by the Americans so ably, that since the city was freed of yellow fever in 1901, not a single case has originated in Havana. Almost every month a case or two is brought in from some infected port, but by putting the

patient in this mosquito-proof room and transferring him to a mosquito-proof ambulance and keeping him in a mosquito-proof room no Havana mosquito can bite him, therefore the stegomyia fasciata has no chance to do its deadly work.

The meetings of the Public Health Association were practically over, as only a business meeting was held after our arrival. During the social events which followed, discussion of the interesting papers that had been read formed the principal topic of conversation. Among those spoken of oftenest were the address of the president of the congress, Dr. Carlos J. Finlay; the paper by Dr. Benjamin Lee, of Philadelphia, read by his daughter, in which he paid a fitting tribute to Dr. Finlay for his distinguished services to science and humanity in discovering the mode of propagation of yellow fever; the paper by Dr. F. F. Westbrook, of Minneapolis, on "Diphtheria Epidemics in Schools and Other Institutions;" the paper by Dr. W. D. Greene, of Buffalo, N. Y., on the "Disinfection of School Books," and the papers on tuberculosis.

The afternoon of our arrival in Havana we visited the quarantine station, the Moro Castle and Cavanyas fortress; the dungeons were alive with recent history. We heard many stories of Spanish cruelty and saw the marks of innumerable bullets on the walls where the Spaniards had shot down their Cuban captives. That night we attended the ball given by President and Madame Palma, which was, we were told, the first large social affair since the war. The palace was lavishly decorated with palms and flowers and myriads of electric lights in the national colors. The members of the Diplomatic Corps and all the prominent people of Cuba were there.

Next morning we became the guests of Don Ramon Pelago, a millionaire, who owns many miles of sugar cane and a large factory twenty miles out of Havana. He chartered the train which took three hundred persons from Havana to his estate, Rosario, where, after visiting the sugar mill, we had luncheon in his exquisite gardens. The tables were set under the cocoanut palms and orange trees, while a veritable jungle of bamboos and banyans and other trees stretched around us.

Havana has so many attractions that we would have found it difficult to choose between them, had not Las Animas Hospital, under the able care of Dr. Juan Guitéras, made the University, the Houses of Parliament and the jewel-like homes in the sub-

urbs of Vedado matters of secondary interest to us. At Las Animas Dr. Guitéras took us into the rooms where the imported yellow fever patients had so recently died, and we found them already occupied by other patients, their disinfection having consisted in burning pyrethrum in the proportion of one pound per 1,000 cubic feet for two hours, in order to destroy any mosquitoes which might have come into the room.

A new building for the reception of yellow fever patients is being erected. It will have double windows and doors protected by wire mosquito netting 18 wires to the inch. Before it is occupied pyrethrum will be burned in it and all the mosquitoes which are not killed by the smoke, will be paralyzed and fall to the floor, where they can easily be gathered up and burned. In the laboratory we came in contact with many fomites, old sleeves which were around the mouths of jars in which many yellow fever mosquitoes were kept; these were stiff with perspiration and dirt from the arms of patients who had well-marked cases of yellow fever in the days when the dangerous experiment of inoculation was tried. These fomites have been in this laboratory for years, and the doctors and laboratory assistants have been in constant contact with them, but no case of yellow fever has developed. This in connection with the work done by Reed's army medical board, seems to prove that yellow fever is only transmitted by means of the mosquito.

Looking at the stegomyia fasciata under the magnifying glass, she presents well marked characteristics—a white harp-like mark between the shoulders, and black and white transverse markings are very distinct on the legs. The life of the mosquito does not seem to be affected by yellow fever. Dr. Guitéras says the blood which the mosquito swallows does not go through any observably characteristic changes. The stegomyia becomes infective the 12th day after biting a yellow fever patient, and may continue to bite and to infect every three days up to the end of its life, a period of 150 days. The larvae and full grown stegomyia fasciata, the anopheles mosquito, which transmits malaria, and many other varieties, are kept in shallow glass jars in the laboratory. These and the splendid collection of slides which have been made of sections of the mosquitoes, etc., show what thorough and valuable work is being done under Dr. Guitéras' supervision.

Dr. Thomas, resident physician of the Mississippi Valley Quar-

antine Station, Louisiana, visited the laboratory with us, and said he could not subscribe to the theory that the mosquito is the only source of yellow fever infection. The following facts which were brought to our notice in Cuba seem to prove, however, that fomites play no part in the transmission of yellow fever. For 21 years no baggage from Cuba or Vera Cruz has been kept out of New York, and for 28 years Spain has not protected herself against baggage from yellow fever infected ports. It may be conservatively estimated that during that time 600,000 persons with 1,000,000 pieces of baggage have traveled from infected ports. The United States sent many soldiers from Cuba to Spain, where they met with no detention, and yet from all this there has not been a single case of infection. Havana and Vera Cruz are in constant communication, and yet for four years, with no attempt to sterilize baggage, Havana has escaped infection.

The U. S. Army Commission studied the question of fomites very thoroughly, and in its report an instance was given in which the blankets, clothing and bedding of patients ill or dead with yellow fever had been stored in a room, and used by two sets of non-immune fresh arrivals in Cuba, and yet no single instance of infection from this clothing occurred. Is it not probable that disinfection which controlled epidemics before attention had been called to the mosquitoes incidentally killed them? Can those who point to cases in which it seems to them that fomites carried the infection be sure that they were not bitten by a stegomya mosquito without noticing it?

The fact that yellow fever has never occurred where stegomya cannot be found is significant, and since they are found well up in the temperate zone, for instance, at Barcelona, Spain, and as far up the Mississippi valley as St. Louis, Mo., and along the sea coast, even in our neighborhood, at Virginia Beach, I trust these observations may be of practical interest to my colleagues of this Society.

Some of the members of our party returned from Havana via Florida and others by steamer to New York and Baltimore.

At the close of the yellow fever discussion in Panama Dr. Charles Chassarguae, of New Orleans, offered a resolution that "owing to the suffering and to the serious danger to health and life for which the mosquito is known to be chiefly, if not solely, responsible, it is the imperative duty of all communities and gov-

ernments to use all the means in their power for the destruction and gradual annihilation of the pestiferous insect in question." The resolution was adopted.

Dr. Vaughan said that he was much interested in the paper, and wished that he had been able to accompany the representatives to Panama, but this was impossible. The question as to the spread of yellow fever had been pretty well settled by the investigations of Dr. Walter Reed, who brought forward indisputable proof that the mosquito was the active agent in spreading the infection. His views were generally accepted by the world at large, and but few now believed otherwise. His proof was absolutely conclusive. [Dr. Vaughan briefly recounted the methods used by Dr. Reed in substantiating his theory.]

Dr. A. F. A. King regretted that he had not been present to hear all the paper. The portion that he had heard was extremely interesting. There was no longer any ground for discussing the etiology of yellow fever since Dr. Reed published the result of his investigations. Occasionally, however, some one criticized Dr. Reed's methods and results. Dr. King was glad to learn from Dr. Slaughter that the good work was still going on, and that there had been no new cases of yellow fever in Havana except those which were imported. The stegomyia was a most insignificant gnat, not one-half the size of our ordinary mosquito. Dr. King believed that other insects, bedbugs, fleas, and vermin, were instrumental in spreading diseases whose causes were at present unknown.

Dr. Acker said that he had listened to the reading of the paper with great pleasure. Dr. Slaughter had referred to a criticism of the work of the Canal Commission. He asked whether she had seen anything on her trip to justify the views that had been expressed.

Dr. Reyburn said that the paper was one that allowed very little discussion. He arose to express his appreciation. The question as to the etiology of yellow fever had been definitely settled. We had among us a living witness to the correctness of Dr. Reed's conclusions, in the person of Dr. Carroll.

Dr. Slaughter, in closing, thanked the members for the kindly views they had expressed. The etiology of yellow fever was one of the main topics of discussion in the convention, and the question was by no means settled. Authorities in New Orleans and many other Southern places, were not as convinced as we were upon the subject. The wording of a resolution presented before the convention was such that it did not admit that the mosquito was the only factor in the spread of yellow fever. In answer to Dr. Acker, she spoke of the criticism of the Canal Commission. She deplored the withholding of necessary supplies, wire netting, etc. Chagres fever was named from the river along the banks of which the

disease prevailed. It was a malignant form of malaria, the aestivo-autumnal variety of the Italians. The number of persons in Panama who had malarial organisms in their blood was remarkably large—estimated at 70 per cent. of the population. This fact and the constant menace of yellow fever indicated the enormity of the task which devolved on our health officials in that country.

SALINE INFUSIONS.*

By C. L. G. ANDERSON, M. D.,

Washington, D. C.

The blood is a circulating, cellular fluid, carrying nutriment and oxygen to the tissues, and CO_2 and other waste from them. The blood constitutes from 1-20 to 1-12 of the body weight, distributed as follows: Heart, lungs and large vessels, $\frac{1}{4}$; muscles, $\frac{1}{4}$; liver, $\frac{1}{4}$; other organs, $\frac{1}{4}$.

The blood of a healthy man has a specific gravity of 1.055 and is of an alkaline reaction, due to disodic phosphate (Na_2HPO_4) and sodium acid carbonate ($NaHCO_3$).

This life-sustaining fluid circulates about every 23 seconds in a closed system of elastic tubes, under more or less tension, as determined by the quantity and character of the blood, the healthiness of the vessels and their normal or abnormal stimulation through the vasomotor nerves. It did not take man very long to find out that the loss of much blood soon resulted in death, and, as knowledge advanced, he set to work to restore it. The only way to do this was to take the blood from another person or animal and to inject it into the vessels of the loser. We note that this was practiced long before the circulation of the blood was known. The life of the donor was often sacrificed in this procedure, and the practice became so common at times as to necessitate prohibition by the State.

The injection of blood was called *transfusion*, and the writer believes this term should not be used in connection with saline solutions. Transfusion is as ancient as the history of medicine itself, being mentioned by the Egyptian, Hebrew, Syrian and other writers. Ovid[1] refers to it in the Metamorphoses, and Pliny and Celsus both condemn the practice. There are also references

*Read before the Medical Society of the District of Columbia.

to transfusion by Herophilus, Tanaquilla and in the books of the priests of Apollo.

In April, 1492, the Jewish physician of Pope Innocent VIII endeavored to prolong his life by injecting the blood successively of three young men. "No effect was produced upon the Pope, but the three young men died." The failure was ascribed to the direct arterial method, which is said to have been used.

Transfusion lapsed into disuse during the dark ages, but revived about the middle of the seventeenth century. England is proud to claim the first public demonstration of transfusion of blood, which was done by Richard Lower, of Oxford, and Robert Boyle, before the Royal Scociety of London, in the May meeting, 1665.

Jean Dennys, professor of philosophy of the faculty of Montpelier, with the Surgeon, Emmeretz, did a successful transfusion upon a young man June 15, 1667 ; but the practice was soon forbidden by the famous decree of Chatelet, in which the criminal judge decided that "in future transfusion may not be performed upon a human subject without the permission of a doctor of Paris." In the next year the Court of Rome forbade the act in Italy, and it is scarcely mentioned again until 1818, when Dr. Blundell, of London, seeing a young mother succumb in two hours to puerperal hemorrhage, renewed experiments in transfusion with final success.

In 1862 Nussbaum successfully transfused with defibrinated blood. It is creditable to our profession to read that Nussbaum, Vincent, and other surgeons gave their own blood. In 1874, an American doctor[2] in advocating transfusion, says: "Therefore, by this operation, justice may recall the victim to life for an instant in order to reveal the author of the crime." So late as 1877, Roussel[3] writes, "To bestow blood on a man who is dying from having lost too much, or to replace by healthy and youthful blood that which disease or age has impaired, seems to be so logical a process and practically so easy of execution that human ingenuity has seized upon the idea from the very infancy of the world, or at least from the very earliest ages of medical science," for we read in the Bible,[4] "For the blood is the life." However, during the middle period of the 19th century experiments had been made upon animals with a mixture of blood and water, water alone, milk and, finally, with a salt solution. During the cholera epi-

demic of 1848 suggestions were made that the rapid loss of fluids in these cases be restored by injecting salt solution. Dr. I. S. Stone,[5] in a paper read before this Society in 1900, states: "It was not until the year 1886 that an artificial serum was tried by Dr. Cottrell, of Edinburgh, a suggestion of Dr. Hicks."

Increased knowledge of the physiology and pathology of the blood shows that transfusion is generally useless and frequently dangerous, but I do not condemn it *in toto*, as most writers do. It was an important and essential stage in the evolution of the saline infusion and undoubtedly saved life at times. Even nowadays an aseptic intravenous infusion of blood serum would often be beneficial were the better artificial serum not available.

COMPOSITION OF THE SALINE SOLUTION.

Having arrived at a period, 1885–1890, when it became known that an artificial serum is better and more efficacious than the entire or whipped blood, the question arose, What shall be the composition of the serum? The plasma or *liquor sanguinis* is normally very complex, and under abnormal conditions becomes still more complex. The inorganic salts comprise about .85 per cent., consisting chiefly of sodium and potassium chlorides, sulphates and phosphates, with calcium and magnesium phosphates. Sodium chloride is more abundant than all the other salts together, comprising 5.5 parts per thousand.

Theoretically, in prescribing an infusion we should consider the quantity and quality of the blood, whether the patient is suffering from disease or trauma, whether an operation is being done or impending, the anesthetic used, if any; the tension of the vessels, whether there is enough vital force left to respond to treatment, drugs given, and a dozen other factors. Practically, however, it is found that in most cases in which infusions are now given they act by their bulk rather than by their specific character. The essential factors are that the solution shall be aseptic, neutral or faintly alkaline in reaction and isotonic with the blood.

Sodium chloride, besides being the most abundant salt in the plasma, is easily procured, and particularly adapted to physiological processes. A concentrated solution causes the erythrocytes to shrink; if too dilute, the cells swell and give up their hemoglobin.

The universality of the .6 per cent. salt solution appears to have resulted from its use in laboratory experiments. It is isotonic

with frog's blood, and thus naturally assumed to be innocuous to human corpuscles.

By observing human blood cells in a .6 per cent. solution they are seen to swell and laking occurs. Cryoscopy demonstrates that .9 per cent. of sodium chloride is required to reduce the freezing point of the solution to that of the freezing point of normal blood, which is —0.56 C, the law being that saline fluids with the same freezing point have the same osmotic tension. Chemical analyses of the plasma, and computing the sodium as a chloride, give .84 per cent. as the amount of salt in human plasma. From these determinations it is clear that the osmotic tension of blood is equivalent to that of a sodium chloride solution of from .84 to .9 per cent. concentration. In view of these facts it is hard to understand why a .6 per cent. solution of sodium chloride in distilled water continues to be used as a "normal salt solution."

Sydney Ringer in his physiological experiments accidentally discovered that solutions made with tap water preserved the irritability of tissue longer than solutions made with distilled water; and more recently Loeb has shown that sodium chloride is actually toxic toward cellular activities when uncombined with other salts. In addition, it is found that ordinary table salt is better than the pure sodium chloride when no other salt is added; and it is now known that the advantage of using table salt or tap water lies in the calcium and potassium salts in them.

Howell[6] concludes that the sodium maintains the proper osmotic relation between the body cells and fluids, that the calcium is the stimulating agent to heart muscle, and that potassium is essential to its rythmical contraction and relaxation.

At any rate, calcium and potassium, though present in such small quantities in the plasma, are much more abundant in the body cells, and without the small quantity in the plasma these metals would be dissolved out of the cells. These small quantities of potassium and calcium in plasma are not then to be looked upon as accidental, but essential constituents of it.

Cushing recommends as a "physiologically balanced solution" the foliowing:

Sodium chlorid ($NaCl$)	0.9
Calcium chlorid ($CaCl_2$)	0.026
Potassium chlorid (KCl)	0.01
Distilled water (H_2O)	99.064
	100.0

Mathews[8] says, "For practical purposes, it will be best to consider the saline equivalent of plasma as .9 per cent., nine grammes to the liter or 138 grains to the quart."

When accuracy is obtainable in the preparation of the fluid for infusion, it would seem that the following two solutions meet the indications, so far as we know them at present, for a "balanced" and "alkaline physiological solution" respectively:

A.			B.		
	Sodium chlorid	.9		Sodium chlorid	.75
	Potassium chlorid	.03		Sodium carbonate	.25
	Calcium chlorid	.02		Water	100.
	Water	100.			

You will observe that we cannot have calcium chlorid and sodium carbonate present in the same saline solution, as the calcium would be precipitated as a carbonate.

The *quantity*, *temperature* and *effects* of saline solutions vary so much according to the conditions for which given, and the site and technique of the infusion, that we will proceed at once to a consideration of the latter.

In order to present the methods of infusion at a glance, I have furnished the following scheme:

1. Intra-arterial
   - a. By section of artery and introduction of canula.
   - b. By hollow needle.
2. Intra-peritoneal
   - a. Through angle of wound or sound abdomen (no exit).
   - b. Left in at operation, incision closed (no exit).
   - c. Through inlet and exit (irrigation).
3. Intra-intestinal (Enteroclysis)
   - a. Solution all retained.
   - b. Through inlet and exit (irrigation).
4. Intra-cellular (Hypodermoclysis)
   - a. By one needle.
   - b. By many needles.
5. Intra-venous
   - a. With bleeding ("depletory infusion") at same or separate part.
   - b. Without bleeding, by canula or needle.

Most of the above procedures can be *repeated*, either at the same point or at another location. A few of the methods have properly become obsolete, while others are not used enough. Some require general anesthesia, some local, others none.

The *intra-arterial* way of approach was in use for transfusion of blood, and the saline solution was likewise used. Dawbarn[9] at one time enthusiastically advocated the use of a hypodermic needle to introduce the solution into an artery, preferably the

femoral. Its supporters claimed that it was slower and caused less disturbance of the circulation, and that the capillaries filtered out any emboli that might be present. I know of no one now who uses the intra-arterial method.

The intra-peritoneal method.—Gradual introduction of salt solution into the peritoneal cavity after operating has been performed by means of a small tube placed in the lower angle of the laparotomy wound and down into Douglas' pouch. The fluid was allowed to enter at the rate of about 1 cc. per minute. Salt solution has also been introduced into the abdomen through hollow needles thrust through the abdominal wall. Of course no one would dream of doing this now-a-days. After long and difficult operations, especially when raw surfaces have been left behind, it is perfectly proper to leave in some hot salt solution in order to prevent adhesions and to ward off shock, suppression of urine and paresis of the bowel. When the question of irrigating with a continuous or interrupted flow arises, much can be said *pro* and *con*. Its chief use is in general peritonitis. Death from peritonitis is due, not to the local lesion, but to the poison that gains entrance to the blood and lymph channels, and thus reaches the vital centers.

Fowler[10], in advocating elevation of the head and trunk in diffuse septic peritonitis, claims that the peritoneum is a large lymph sac, and that peritonitis is really lymphangitis. When infection occurs exudation takes place from the lymphatics and plugs up the lymph channels, and thus protects the body at large from poisoning. If the septic material is so virulent or increases so rapidly that the channels cannot be obstructed, the general organism is quickly infected. As a rule, the drier and less sloppy the peritoneum, the better. If the inflammatory process can be localized, avoid irrigation; if it is acute and spreading rapidly and the toxin is overwhelming the patient, use irrigation.

The inlet tube is passed deep in the pelvis, while the exit is placed at the most suitable point. As much as ten pints every fifteen minutes have been passed in and out the peritoneal cavity. The solution should be physiologically accurate, in order not to injure the cells which protect the peritoneum. The temperature of the fluid need not be high, especially when much fever is present.

The *intra-intestinal method*, either by simple infusion or by colon

irrigation, is so common as to require but a word. It is sufficient to combat many abnormal conditions, it meets with no objection on the part of patients or friends, asepsis need not be rigid, there is no danger from embolism, and it is easily repeated. With a tube high in the colon, and ample exit, irrigation can be indefinitely kept up. The temperature of the solution is usually a little above that of the body; in special cases below.

The intracellular method or hypodermoclysis is another procedure that meets with but little resistance by the patient and family, but it requires more attention to asepsis, and to the amount, composition and temperature of the solution. The reservoir, tube and needle, and the site of the infusion require the usual sterilization. The needle or needles are inserted under the anterior axillary fold in the male and under the breast in the female. The patient can be infused anywhere under loose skin, as in the lumbar region or the inside of the thighs. I do not approve of injections between the shoulder-blades or other points subject to pressure, nor do I see any reason for inserting the needle into the belly of a muscle, as has been advised.

As a rule, the solution is introduced too rapidly, and massage is done too roughly. Several quarts can be infused in the course of several hours. In slow infusions the temperature of the solution is liable to get too low by the time it enters the tissues. Temperatures have been recommended ranging from 98.5 F. to 120 F.

Too large a solution may cause gangrene from tissue anemia; too hot, thermic abscesses; too cold, shock and non-absorption. The solution should not be administered by a syringe, but by static pressure, the elevation of the receptacle varying from one foot to four. The anesthetist should not be burdened with the manipulation of the needles when the solution is given during general anesthesia. Hypodermoclysis represents the most useful and widely applicable of all methods proposed for the administration of artificial sera. This simple procedure can be done in home or hospital, by physician or surgeon, by tyro as well as by expert.

Intravenous infusion is the method *par excellence*. In critical situations, when a quick response is required, no other method is comparable with it. It demands instinctive surgical sense, and a finer versatility than any other remedial procedure in the domain of medicine and surgery. The usual site of infusion is at the

bend of the elbow, which is cleansed as for any other surgical operation. Encircle the arm with a bandage, and draw it only tight enough to stop the venous flow. If the patient is not under general anesthesia, use a local anesthetic. An incision three to four cm. long is then made through the skin directly over, just to one side of, or obliquely across, either the distended median basilic or the median cephalic vein. Isolate the vein from its surrounding fascia for a short distance by blunt dissection. Pass the loop of a catgut ligature under it, and cut its loop, thus leaving two ligatures beneath the vein. If depletion is desired, incise the vein and let the blood flow. When bleeding is not desired, first tie the distal ligature permanently. Now make a flap incision, with its convexity pointing distally, into the vein. Pick up the apex of the flap with forceps, press air out of the vein and wipe away clots; and, while the sterile salt solution is flowing from the canula, insert its nozzle into the vein. The bandage, of course, is removed at the same time. The proximal ligature is then tied in a loop or slip knot, thus holding the canula in place and preventing entrance of air. When sufficient solution has been introduced by static pressure draw out the canula, and tie the proximal ligature permanently. Cut both ligatures short, suture the skin and dress the wound. Any other large superficial vein can be utilized, as the basilic or internal saphenous. We probably use the median basilic or median cephalic from inherited custom in Phlebotomy, and I suggest that the novice select the median vein a couple of inches below the elbow, where he cannot possibly do any harm. A vein in an amputation, or other large wound, can be infused at the time of operating. Also the umbilical vein of the cord in the new born may be so utilized. With a filtered solution, sterile vessels and a clean, simple technique danger from embolism by air, clot or foreign body is practically *nil*.

I have never yet seen an intravenous infusion given without confusion and avoidable delay. Every patient subjected to a major operation, or general anesthesia, should have an infusion-site prepared in like manner to the operation-site, and the administration of the infusion assigned to one particular assistant. One pint of the solution is usually enough, though where there has been hemorrhage or choleraic discharge, more can be infused. After the critical stage has been tided over by an intravenous

infusion, hypodermocylsis offers a safe and easy means for additional infusion.

The flow should not exceed the rate of 500 cc. in five minutes. Hildebrand believes the maximum quantity of saline solution that the kidneys will care for every 15 minutes, is one drachm of solution to one pound of body weight. Bovée says "Ordinarily not more than one ounce per minute should be injected into tissue or vein." The temperature of the solution does not appear to be a very important factor in the infusion. As a rule, it should be a little above that of the blood, and should be determined by a thermometer, and not by the hand.

INDICATIONS FOR SALINE INFUSIONS.

1. Hemorrhage; traumatic, operative, obstetric, intra-abdominal, pulmonary, gastric, etc.
2. Shock; with or without loss of blood.
3. Collapse, during or after operations, or in the course of a disease, as in cholera or typhoid.
4. Toxemias in general; metabolic, bacterial or protozoal.
5. Infections and septicemias.
6. Puerperal eclampsia.
7. Puerperal infection.
8. Uremia, suppression of urine, and diabetic coma.
9. Cholera, cholera infantum and profuse diarrhoeas.
10. Anemic patients, prior to operations.
11. Post operative thirst and nausea.
12. Chloroform and ether narcosis.
13. Poisoning by CO, CO_2, and illuminating gas.
14. Poisoning by alcohol, chloral and carbolic acid.
15. Peritonitis.
16. Pneumonia.
17. Severe burns, with shock, and hemolysis.
18. Epilepsy, mania, hysteria, neurasthenia, and various psychoses.
19. Dysentery and ileus.
20. Syphilis and mercurialism.
21. Phosphorus and idoform poisoning.
22. To introduce fluid in esophageal or pyloric stricture.
23. Locally in many eye diseases by subconjunctival infusion.
24. Meat intoxication, eczema, mycosis, fungoides, etc.

Hemorrhage.—Time permits me to refer to but a few of these conditions. Hemorrhage may be divided into two general classes, external and internal or concealed. Fortunately but few cases of internal hemorrhage need now be classed as inaccessible. External bleeding is checked by the usual surgical measures, and then, if thought proper, infusion is given to increase the volume of blood and to improve the general condition. In internal hemorrhage the problem that confronts us is more complex and serious. Most of these hemorrhages are concealed, and often we are not sure that bleeding exists. There is a question whether we should first operate, with the patient in more or less shock, or first infuse, with the hope of thereby checking the hemorrhage and improving the general condition so much that the patient will be in better shape for operation.

In addition, there are the inaccesible hemorrhages that we cannot reach by operation.

We hear positive statements that intravenous infusion contracts the vessels and thus diminishes the bleeding. Others say it increases hemorrhage from large vessels and lessens hemorrhage from small vessels. Advocates of very hot solutions, 110 to 120 degrees Fahrenheit, claim that the unstriped muscular coats of the vessels are contracted by the heat very much as the uterus contracts under hot irrigation. In cases of severe hemorrhage, where the bleeding point is not secured by ligature, I think we should differentiate between the effects of the infusion upon the bleeding from the vessel and the effects of the infusion upon the condition of shock or collapse accompanying the hemorrhage. If the saline solution checks the hemorrhage, of course the general condition will permanently improve ; but the infusion may temporarily improve the shock, while the bleeding is not checked, but may be rendered worse. Every surgeon is familiar with the increase in hemorrhage occurring upon reaction (intermediate hemorrhage), and in infusing under these conditions we oppose nature's efforts to check the bleeding, which are unconsciousness, slow and feeble pulse and respiration, and low blood pressure.

Remember, in the old days they bled to faintness in hemorrhage from the lungs, and it was the custom of Loomis, for the same condition, to bleed the patient into his own veins with the vegetable lancet, aconite.

In internal hemorrhage and shock, therefore, infusion and re-

action are probably harmful, and there is no sense in strenuously inducing and waiting for reaction before proceeding to operation. Besides, the anesthetic itself often improves the condition sufficiently long to allow us to reach the bleeding point, after which recourse can safely be had to infusion to increase the vascular pressure, and to stimulate the heart. Moreover, the trauma, from operating, may be beneficial, for we read in Crile's experiments that burning or crushing the paw caused a rise in the blood pressure and an increase in the respiratory rhythm. I believe harm has been done by quoting Crile[12] as authority to direct infusion in internal hemorrhage, with the statement that the collapse is due to the diminution of the blood pressure, and that a saline infusion will raise it. We must not forget that while the tendency to clot seemed to increase with the infusion, "there was a very marked increase in the tendency to hemorrhage, especially from the small vessels. Wounds made before the introduction of the saline solution, which had become dry, began to ooze soon after the beginning of the infusion."

With open vessels, therefore, it is in accord with clinical experience, experiments upon animals, and common sense, that saline infusion is pouring in at the bung hole and letting run at the spigot.

Shock.—When it comes to the question of treating shock unaccompanied by hemorrhage, with infusion, the problem is not so difficult, though the condition itself is complex and various. For definitions of shock, I refer you to Kinnaman's[13] article. The most concise is that given in Vaughan's[14] Surgery.—"Shock is a sudden depression of the nervous system and vital force, caused by injury or emotion." Crile in his experiments in treating shock, found that saline solution, intravenously or subcutaneously introduced, in every observation caused a rise in the blood pressure. He states "in shock, (vaso-motor impairment, i. e., lowered peripheral resistance) the benefit is due to the force added to the venous circulation. * * * The effects of saline infusion were almost wholly mechanical and physical; within a reasonable range, they were independent of variation in the temperature, the rate of flow, the height above the animal, and the vein into which it was introduced. The mechanical factor consists in adding the force of the infusion to the force of the venous blood-stream,

which raises the venous blood-pressure, thus increasing the output of the heart."

An important practical point to remember in Crile's experiments is that the inhalation of even a few drops of chloroform at the same time that the infusion was given, caused an immediate but gradual fall in the blood pressure, while ether, as a rule, produced no change in the blood pressure.

Toxemias.—Perhaps the most important application of saline infusion is in the treatment of the toxemias. The idea of literally washing poisons out of the blood and tissues, was eagerly grasped by physicians. If to the bland and simple saline solution, we add a medicament or specific antitoxine, the procedure becomes still more useful. This subject is so large and so pregnant with possibilities, that now I can do no more than refer to it.

In conclusion, I wish to state that I have presented this matter only in a general way, and by reason of the time limit, have omitted many important considerations.

In view of the great value and wide applicability of saline infusions, I am surprised to find that the latest, 1904, edition of the "American Text-Book of Surgery" devotes but half a page to this subject, and that Dennis, in his "History and Development of Surgery During the Past Century," fails even to mention it.

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Dr. Carr said that he was glad to note the cautious way in which Dr. Anderson advised the use of saline infusions in hemorrhage. At present they were used altogether too carelessly and recklessly. It would be a good thing if more attention was given to the sterilization of the apparatus before it was used. Many patients died

after these injections, and it was supposed that death was due in each case to the disease or injury ; but it was unknown how many of these patients died as a result of the infection which was spread through the system by the injections. Abscesses also were not infrequently observed after the subcutaneous injection of salt solution. In uraemic convulsions it should be used with caution. He had seen several instances in which oedema of the lungs followed its reckless use.

Dr. Barrie spoke of the use of salt solution as a food. In several Continental hospitals, after abdominal operations, patients were given nothing by mouth or rectum for five or six days ; instead, subcutaneous infusions of saline solution from one to two quarts were given daily.

Injections were made in the anterior portion of the thigh, absorption was slow, which was desired. Results apparently perfect.

Dr. Young, of Baltimore, was introduced by Dr. Hagner. Dr. Young expressed much pleasure at having heard the paper, and commended the views expressed therein. He was a great believer in the efficacy of saline infusions in surgical and other work. He had written a paper several years ago in which he called attention to their usefulness in general septicaemia, and reported a case in which they acted most favorably. The case was very severe. The patient happened to be with the Doctor in the Blue Ridge Mountains, and what to do at first he did not know. He gave 4,000 cc. of salt solution in the veins within twelve hours. This was followed by a drop in temperature from 105.8 to 100, and in the pulse rate from 180 to 104. The patient completely recovered. Other general infections could well be combatted in the same way. The saline solution diluted the blood and aided in the elimination of deleterious matter ; it also served to keep up the function of the kidneys. Many old men could be operated upon safely with the aid of an infusion, whereas otherwise operation would be contraindicated ; he always used it before operating upon patients who were on the " ragged edge." Subcutaneous infusion was generally sufficient.

Dr. Keyes, of New York, was invited by the Chairman to participate in the discussion, and said that the side of the subject which most interested him had not been dwelt upon, namely, the usefulness of repeated small injections in the rectum as a stimulant, as advocated by Gant, of New York, and successfully used by others. The stimulant effect of small quantities of saline solution in the rectum seemed to be equivalent to that of large ones given intravenously, and they had the advantage that they could be frequently repeated. Hence, when the emergency was not great, this method could be employed.

CASE OF FRACTURE OF OS CALCIS.*

By TRUMAN ABBE, M. D.

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The fracture occurred last summer. The patient was operated upon and then turned over to me for subsequent treatment. The case is both unusual and interesting. Such fractures constitute about two per cent. of all accidental fractures. They are rarely well-diagnosed. I here show an X-ray picture in illustration of the case. The most important factors in producing the injury are compression by the weight of the body falling upon the foot, and contraction of the *tendo Achillis*. This patient was a woman 68 years of age. She stepped off a board walk, the result being a fracture of the os calcis. She was unable to stand, and was taken home ; examination the next day disclosed the nature of the injury, and showed that a marked interval existed between the ends of the fragments ; one of them was almost pushed through the skin at a point somewhat above the normal location of the bone. The object of the operation was to secure the ends of the fragments in apposition, and this was accomplished by sutures passed through the fibrous tissue of the capsule, not through the bone itself. The incision had been made on the inner side of the ankle. The foot was put up in marked *equinus* and was kept so for eight weeks. At the end of this time the dressings were removed. The equinus gradually disappeared, and the woman can now walk just as well as before the accident.

Dr. J. Ford Thompson said that the case reminded him of one that he had treated four or five years ago. The patient was a plumber, who in the course of his work, had unexpectedly stepped into a hole. Dr. Thompson was called in consultation by Dr. C. E. Hagner. He found the man lying on the floor. He put the foot up in plaster of paris, and the man insisted on going home. The next day, when the dressing was removed, the fragment of bone was found to have been drawn up the calf of the leg, quite a distance above the normal site of the os calcis ; it was very irregular in shape, and the skin over it was very thin. In order to get it back in place an operation was required, and was performed at the University Hospital the following day. There was much difficulty in securing accurate apposition of the fragments on account of the irregular shape of the smaller portion

* Reported with specimen to the Medical Society of the District of Columbia, March 8, 1905.

above mentioned. Finally the ends were firmly sutured, and the foot was put in extension. Recovery was complete, and there was now no interference with the gait.

He had treated two other cases, which were interesting as to the cause of the injury. The first patient was a man who kept an eating saloon. He was washing his foot in a stationary wash-basin, when the bottom came out, letting his foot down suddenly. The sharp edges of the basin scraped the *tendo Achillis* from the os calcis. The second patient was a school-teacher, who was doing the same thing; the same accident happened, with the same result. Both these individuals recovered perfectly under surgical treatment.

THE TREATMENT OF FIBROID TUMORS OF THE UTERUS.*

By J. WESLEY BOVÉE, M. D.,

Washington, D. C.

This subject, though considered a hackneyed one, and this idea emphasized by the frequent presentation to medical and gynecological societies of gross specimens of uterine fibroids with histories limited to symptomatology, really deserves the most careful consideration.

The personal equation enters largely into the conclusions drawn as to the proper treatment of these neoplasms. The practitioners who see these cases commonly before operation for the removal of such tumors and who do not perform these operations possibly do not so well remember the cases that terminate unfavorably or render their hosts permanent invalids as those that pass along satisfactorily without operation or those that succumb to operation. The surgical enthusiast who has served as an interne in a hospital where he has assisted in many operations perhaps thinks all fibroids should be removed, basing such opinion largely upon the success of that character of surgery he has experienced.

Still another class, composed of general practitioners and most surgeons, take a middle or so-called conservative ground, believing those fibroids giving marked trouble should be removed and all others unmolested. In recent years a few others have, from careful analysis of cases and study of the tissues removed, reached

*Read before the Medical Society of the District of Columbia, March 29, 1905.

the conclusion that no fibroid tumor of the uterus should be considered perfectly innocent.

The careful study of pathological tissues is recognized as being the most reliable source of information upon which to base therapeusis. This statement applies to uterine fibroids and their complications equally as well as to the various other pathological conditions encountered in medicine. That the complications and degenerations of these neoplasms require most careful consideration is evidenced by the reports of Noble,[1] Cullingworth[2], Ellice McDonald[3], Martin[4], Frederick[5], Scharlieb[6], Hunner[7], Webster[8] and others. Previous to January 31, 1904, Noble[9] had subjected to careful study 278 cases of uterine fibroids upon which he had operated. Scharlieb carefully analyzed 100 cases, McDonald has studied 280, Martin 205, Cullingworth 100, Frederick 125, Webster 210, and Hunner 100 cases, thus furnishing us with results of the examination of the conditions in 1,398 cases operated upon. It would seem that a careful scrutiny of the degenerations and complications met by these authorities should furnish abundant material upon which to base reliable conclusions as to treatment. In these 1,398 cases the following summary of degenerations and complications may be made by combining the very complete tables of Noble and Webster.

Table of the degenerations and complications in a series of 1,398 cases of fibroids of the uterus operated on or reported by Noble, Cullingworth, McDonald, Martin, Scharlieb, Frederick, Webster and Hunner.

Carcinoma of the corpus uteri,	29
Epithelioma of the cervix,	12
Adeno-carcinoma of the cervix,	1
Epitheliomatous infiltration of fibroid tumor arising from adeno-carcinoma of the corpus uteri by metaplasia,	1
Sarcoma,	24
Chorioepithelioma,	2
Myxomatous degeneration,	48
Cystic degeneration of tumor,	53
Oedema of tumor,	17
Calcareous infiltration of tumor,	28
Necrosis of tumor,	78
Twisted pedicle, pedunculated tumor,	3

Intraligamentous development of fibroid,	45
Subvesical development of fibroid,	2
Hyaline degeneration of tumor,	69
Hyaline degeneration and calcareous infiltration,	8
Adeno-myoma,	8
Hemorrhagic degeneration of tumor,	13
Fatty degeneration of tumor,	7
Suppuration of tumor,	10
Procidentia uteri,	12
Retroversio uteri,	15
Pregnancy,	7
Ectopic pregnancy,	3
Ectopic pregnancy, salpingitis, hydrosalpinx,	1
Dermoid cyst, bilateral, umbilical hernia,	1
Dermoid cyst, suppurating, sinus through abdominal wall,	1
Dermoid cyst, with twisted pedicle,	1
Dermoid cyst,	2
Ovarian cyst,	59
Ovarian cyst, with twisted pedicle,	2
Ovarian cyst, suppurating,	1
Ovarian cyst, bilateral,	2
Ovarian cyst, unilateral,	22
Ovaritis, unilateral,	3
Ovaritis, bilateral,	29
Cystic degeneration of ovaries,	78
Calcification of ovary,	1
Ovarian fibroma,	3
Ovarian carcinoma,	2
Papillary carcinoma of both ovaries,	1
Hematoma of ovary,	1
Parovarian cyst,	7
Broad ligament cyst,	2
Abscess of ovary,	1
Abscess of ovary, single,	5
Abscess of ovary, double,	2
Tubo-ovarian abscess,	2
Pyosalpinx (unilateral 9),	20
Pyosalpinx, bilateral,	11
Pyosalpinx with tubo-ovarian abscess,	2
Abscess of broad ligament,	1

Hematosalpinx,	8
Hydrosalpinx,	25
Hydrosalpinx, bilateral,	15
Hydrosalpinx, unilateral,	18
Hydrosalpinx and tubo-ovarian abscess,	1
Salpingitis,	46
Salpingitis, bilateral,	2
Salpingitis, unilateral,	10
Salpingitis and hydrosalpinx,	3
Salpingitis and tubo-ovarian abscess,	3
Salpingo-oophoritis, unilateral,	7
Salpingo-oophoritis, bilateral,	42
Fibroma of fallopian tube,	1
Papilloma of appendages,	1
Appendicitis,	40
Hernia,	4
Hernia, ventral,	1
Hernia, umbilical,	3
Carcinoma of umbilicus,	1
Tuberculous peritonitis,	1
Universal adhesions,	4
Adhesions to viscera,	6
Adhesions to tumor,	5
Varicose veins of pelvis,	4
Thrombosis of veins of lower extremities,	2
Total,	1,011

In this table we note among the varieties of degeneration of the tumor or the uterus that cancer was present in the body of the organ 32 times and in the cervix but thirteen times. Sarcoma was found 24 times, myxomatous degeneration 48, necrosis 76, cystic degeneration 53, twisted pedicle of a pedunculated fibroid three, suppuration ten, adeno-myoma eight, and pregnancy seven times.

Among the complications may be noted 295 cases of inflammatory conditions of the appendages, 51 being suppurative and the remainder cases of adhesions, non-suppurative inflammation, hydrosalpinx, hematosalpinx, etc. Cancer of the ovary was found three times and of the umbilicus once. Dermoid ovarian cysts

were encountered three times, in which twisted pedicle and suppuration were complications. Ovarian cyst was found 86 times, and here again twisted pedicle and suppuration were noted. Papilloma was present twice and ectopic pregnancy four times. In forty cases appendicitis was mentioned, though silence as to the variety is unfortunate. There were eight cases of hernia, seven parovarian and two broad-ligament cysts. Fibroma of the ovary was found three times and of the fallopian tube once. The total cases of cancer of the uterus and the appendages was 48.

We learn from this analysis of 1398 studied cases of uterine fibroids and their complications that without operation eighteen per cent. of them would have died from degeneration of the tumor or of the uterus, and nineteen per cent., a very conservative estimate, from the existing complications. This makes a grand total of 37 per cent. of this large collection of cases of fibroid tumors of the uterus that would have died had no operation been done. A very considerable proportion of these degenerations and complications were not discoverable before operation. The large percentage of cases of cancer in the body of the uterus is of special moment, it having been found in this part 32 times, as compared with thirteen times in the cervix, a relative increase of ten fold. Certainly diagnosis of this condition in the body of the uterus complicating fibromata would have been well nigh impossible. There were about 140 cases of malignant degeneration, or about ten per cent.

It is not held that all the 1,011 different degenerations and complications found were directly due to the presence of the fibroid tumors. We are justified, however, in asserting that the marked increase in the proportion of malignant degeneration of the body is induced by the presence of the tumor. When epitheliomatous infiltration of the fibroid occurs it has probably originated from islands of glandular tissue included, as pointed out by Cullen. Sarcoma developing from the tumor more commonly springs from the connective tissue than from the muscular elements. Evelt has made a study of this subject and has reached this conclusion. Rarely it develops here secondarily to some other location. In a specimen removed by Webster sarcoma was found in the center of each of three interstitial fibroids. The patient died in a few months from sarcoma in the lung, which was

considered the primary site of the disease. Appendage disease of an inflammatory nature was found 295 times, 21 per cent of the cases. Webster found it in 99 of his 210 cases, 47 per cent., and Lawson Bait estimated it as fifty per cent. in his work. That it is an exceedingly common complication is apparent. The histories of fibroid cases abound with acute attacks of this nature. The presence of 86 ovarian cysts was probably largely the result of the inflammatory mischief set up. Besides these tabulated details cardio-vascular conditions, as well as such ulterior manifestations as mental aberration, have to be remembered as complications of uterine fibroids.

McDonald found that in 175 autopsies made in women in the Bender laboratory 26 of them had uterine fibroids. This proportion of 14.8 per cent. agrees with the statistics given by other pathologists. It is evident that by no means all of these women had notable symptoms referable to the presence of these tumors. It is well known that the symptoms from them, like those of the early stages of cancer of the same organ, are unreliable as indications for treatment.

Small tumors may be so located as to furnish no evidence of their presence, and again they may be very distressing. The same may be said of larger ones. I have no desire to here discuss the treatment of such tumors from the view point of symptomatology. I prefer to be guided entirely by the evidence herein offered from the pathological side of the question, believing from a considerable experience and the analysis of these 1,398 cases already offered, as compared with the very small mortality rate accompanying operation for the removal of these growths, even though the complications are so common. I believe the scientific treatment of fibroids should always be extirpation. If this rule becomes customary these tumors will be removed early, before the complications and degenerations have so commonly occurred, and hence with a mortality of perhaps a fraction of one per cent. instead of two to five, as at present.

It may be argued that these statistics are based only upon cases operated upon, and that such complications and degenerations do not exist as frequently in all cases. That is only evidence that they should be removed before such conditions develop.

Having decided that these tumors should always be removed,

the procedure by which this is to be accomplished deserves consideration. The main points to be decided are whether myomectomy or hysterectomy should be done, and whether by the abdominal or the vaginal route.

When the tumor, or tumors, if but few in number, can be easily removed, leaving a practically healthy uterus, this should be done, but under the following conditions:

First. If the patient be of the child-bearing age, especially of less than forty years; second, if future pregnancies are desired, or if pregnancy be co-existing; third, if a tube and ovary, probably capable of performing their functions, can be retained, even though these organs are of opposite sides this rule would hold; and fourth, if no apparent evidence of malignant disease is noted.

Under all other conditions hysterectomy should be the operation.

Whether the uterus should be amputated near the internal os or removed in entirety is a question to be determined. Considering the fact that cancer of the organ was found 45 times and sarcoma 24 times, a total of 81, or 6 per cent., in the 1,398 cases, the conclusion inevitably reached is that the scientific procedure must be total hysterectomy rather than any amputation. In fact, this point very strongly suggests the inadvisability of myomectomy. The advantages of supravaginal amputation as compared with total excision of the uterus are that the operation is accompanied by less danger to the patient and that a better support to the vaginal roof with less interference with the vaginal dimensions can be secured. As to the route, the larger proportion will be best done by the abdominal one, inasmuch as complications may best be dealt with by it, and tumors of the broad ligament or of diameters in excess of three inches are more safely and easily removed by it. By the vaginal route myomectomy for tumors having larger diameters can not easily be performed, even though large openings into the peritoneal cavity be made in front of or behind the uterus. Besides, the traumatism to that organ is greater in vaginal myomectomy than when that operation is done by the abdominal route. An exception to this rule, however, is the condition of sloughing or pediculated submucous fibroid tumors, in which case the operation should practically always be done without opening the peritoneal cavity.

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Dr. Henry D. Fry said that a new line of thought was presented by Dr. Bovée's claim that all fibroids of the uterus should be removed on account of the possibility of malignant degeneration. Heretofore we had depended mainly upon the symptoms as an indication for or against operation. For instance, a fibroid of the submucous variety would interfere much more with the patient's health and comfort than a similar growth situated beneath the peritoneum; the indications for operation in the first case were much stronger than in the second. While the tendency to malignancy might be taken into consideration, we could not but regard the symptoms as being the main indication for or against operation. Sometimes fibroids were present for years without giving rise to any symptoms whatever. He mentioned an instance in which such a tumor existed for twenty years without causing any discomfort. It was a question whether such growths should be removed merely because a certain proportion of fibroids did eventually undergo malignant degeneration.

Besides the symptoms produced directly by the tumor, in determining the question of operation the surgeon must also consider other factors: whether there was disease of the kidneys, or heart, or other vital organ. These factors, as well as the symptomatology and tendency to malignant degeneration, must be taken into account in deciding the question.

Dr. I. S. Stone said that the importance of the careful microscopical examination of fibroid tumors had been agitated more than ever during the last few years since the question as to the exact nature of these growths had received more attention. One could nearly always learn something by opening them. Only today after an operation he opened a fibroid and, to his surprise, found peculiar changes whose nature he did not as yet entirely understand. He did not always have an opportunity to have a microscopical examination made, but he always felt more confident after such an examination had been made by an expert. In one case a tumor that appeared to be a fibroid turned out to be a sarcoma.

Many points must be considered before deciding upon the advisability of an operation for the removal of fibroids. Generally speaking, one should operate on every fibroid found; no

one should leave *in situ* a fibroid when it could be safely and consistently removed. As to the tendency to malignant degeneration; if the question should be asked, how many of us had met with instances in which carcinoma was associated with or had developed from fibromata, the answer would probably be that many physicians, like himself, had no recollection of such an experience. He had, of course, seen cases in which fibroids co-existed with malignant disease of the cervix. He mentioned a death due to fibroid tumor in a woman 65 years of age. She had once been treated by Dunlap, of Springfield, Ohio. He did not operate, as he did not think that the patient could bear the ordeal. Later, however, a twist of the uterus and pedicle occurred, and this caused her death. He did not understand Dr. Bovée to mean that in all the cases he had mentioned the malignant disease sprang directly from the fibroids, but that the two were associated diseases. The question was, what were the changes that took place in the fibroid itself?

Dr. Smith said that five or six years ago, in an address as president of the Obstetrical Society, he had strongly advocated the examination of the smaller fibroids, as they were more likely than the large ones to give information as to their origin, growth, etc. In the discussion that followed, Dr. Johnson wisely remarked that while the removal of the growth might be dangerous, the disease was also dangerous. This remark had many times occurred to Dr. Smith, and he made it a point to send his fibroid patients to the surgeon. Hysterectomy was the treatment *par excellence*. The early treatment of fibroids consisted in the administration of ergot, and occasionally this resulted in the forcing out of a polypus; it never cured the intramural or subperitoneal varieties. Then came Apostoli's method; it never removed a fibroid of any size.

The proper procedure was to remove every fibroid just as soon as it was large enough to be felt. Why wait until the unfortunate woman had the humiliation and discomfort of carrying around a large and constantly growing tumor? Her suffering was absolutely to no purpose. Such growths had given rise to imputations of unchastity in unmarried women which had ruined their reputations and caused incalculable suffering and wrong.

These considerations, and many more, indicated the necessity for doing more than giving medicine or performing a myomectomy. The latter was efficient in case of polypi. Dr. Bovée's paper was therefore very *apropos*, but he did not go far enough. The time would come when it would be considered malpractice to allow a fibroid to remain in a woman's body.

Dr. Vale said he could not endorse the recommendation of Dr. Bovée to remove every fibroid uterus, though he was sure it was made after most conscientious consideration. Dr. Vale had in mind, for instance, a young woman with a small fibroid which was apparently not increasing at all in size, and in which neither

pain nor hemorrhage was excessive. In such cases, in the absence of distressing symptoms or any evidence of malignancy, he could not advise hysterectomy. The remarks of Dr. Smith concerning Apostoli's methods of treating these tumors, illustrating as they did a common fallacy, led Dr. Vale to make a few remarks on that aspect of the subject. Apostoli had never claimed to cure fibroids, though in rare instances he had seen them diminish in size, but simply that in the galvanic current we had the best agent for the relief of the two chief symptoms, pain and hemorrhage, and Dr. Vale thought it was this misconception as to Apostoli's claims which was largely responsible for the falling of the method into disrepute. He did not wish to precipitate a discussion as to the merits of Apostoli's methods, a discussion which was rife ten years ago but which he had hardly seen referred to in literature of late. He had, however, a few days before noticed with satisfaction a recent utterance of Dr. Barton Cooke Hirst, one of the leading surgeons of the country, to the effect that in certain cases the symptomatic relief obtained by Apostoli's method was most satisfactory. In 195 cases of fibroid uterus under Hirst's care which had been subjected to surgical treatment there were only seven in which it could be positively stated that death must have ensued without operation, in three of sarcomatous and four necrotic degenerations. Dr. Hirst doubts if there is a more reliable hemostatic than repeated intrauterine applications of the galvanic current of forty to sixty mil-ampères with the positive pole in the uterus. Dr. Deaver had recently taken a similar stand on the question of operative interference in all cases of uterine fibroids.

Dr. Reyburn differed with Dr. Smith as to the necessity of removing all fibroids. If they were small, not growing rapidly, and caused but few symptoms, they need not be removed. He had had some experience with the Apostoli method. That author claimed that his method removed the symptoms, not the growth. Before performing hysterectomy, prior to the menopause, one should take into consideration the distressing symptoms which often followed removal of the uterus: sterility, cessation of menstruation, nervous symptoms, etc. On this account hysterectomy should not be performed in a young woman unless it was absolutely unavoidable.

Dr. Stone said that the symptoms referred to by Dr. Reyburn as being relieved by the Apostoli method were pain and hemorrhage. This treatment did not, however, always stop the bleeding. One of his recent patients received the most thorough electrical treatment that money could buy; she suffered greatly from pain and hemorrhage, and became so weak that she could hardly stand alone. In spite of the treatment the hemorrhage continued until the haemoglobin came down to 50 per cent. The tumor had undergone cystic degeneration. He had seen a number of instances of cystic degeneration in which the hemorrhage was so

severe as to cause marked anemia. The main thing was to stop the bleeding, and if electricity did not do so promptly it was a waste of time to continue the treatment, and something else must be done. He was glad that Dr. Smith had expressed his opinion so candidly.

Dr. Hickling said that the question of operation in these cases was of great interest to every practitioner, and while the accepted method of treatment had changed almost from year to year, he believed that we were gradually getting nearer to the desired goal. The general practitioner usually discovered the tumor, often almost by accident, and the question then arose whether or not to advise an operation. Certainly there were a number of cases, like those mentioned by Dr. Fry, in which there were no symptoms, and the temptation was to act conservatively. When we did so, however, we should remember Dr. Bovée's warning as to what may happen. Some years ago Dr. Hickling advocated electrical treatment, but now he believed that where the symptoms were enough to call for electricity they were enough to demand operation. The method was not sure of relieving even pain and hemorrhage, and absorption of the fibroma is still more uncertain. Furthermore, it might sometimes cause adhesions which made a subsequent operation more formidable. The positive pole, in particular, had this effect.

The question of the advisability of operating for symptoms other than pain and hemorrhage should excite our attention. One of his patients had a fibroid which was apparently harmless ; it was of the subperitoneal variety ; there were no adhesions, no hemorrhage, but there was a vague pain, a sort of general distress, and some prostration. Dr. Hickling removed the uterus and fibroid, and found it far advanced in degeneration ; there was a cavity filled with bloody serum, and altogether the growth suggested malignancy. The patient had been much better than before the operation. Where a fibroid gave any symptoms it should be promptly removed. He favored hysterectomy, partial or complete, in all cases.

Dr. Vale took exception to one of Dr. Hickling's statements to the effect that the galvanic current produced adhesions. This might have been charged against a method suggested by Cutter fifty years before, of puncturing the tumor through the abdominal wall, but with the intrauterine "Galvano-caustique" applications advocated by Apostoli it was absolutely impossible. The only harm which could come from the use of Apostoli's method was the postponement of a necessary operation.

Dr. J. Ford Thompson expressed the belief that the treatment of fibroids by electricity was a thing of the past. He had known them under this form of treatment to grow faster than before. However, his observations had led him to believe that the tendency was not toward greater radicalism. The same principles

that governed the treatment of these tumors were the same that governed the treatment of growths elsewhere in the body. Surgically, it was ridiculous to say that we should remove every uterus that contained a fibroid. It would not be so if Dr. Bovée's reasoning were correct ; but surgeons elsewhere had not noted this marked tendency to malignant degeneration. In fact it was a most rare occurrence for a tumor to change its nature ; he did not believe that it occurred as often as was claimed. This was particularly true of fibromata. He did not understand the opposition to myomectomy; why was it not as well to shell out a fibroid, or cut off its pedicle, leaving a good uterus, as it was to remove uterus and all? When we could cure the patient by enucleation, leaving hardly a scar, why should we not do it? Fortunately a large proportion of these tumors could be removed in this way. The tendency today was toward greater conservatism. Not every woman who was operated on was cured. We often saw the evil results of the removal of the ovaries, uterus, etc. He would not hesitate to operate in any case where it was necessary, but he believed that it was wrong to remove every fibroid uterus on account of a fear that the growth might undergo malignant degeneration. Radical operations without proper justification were wrong, and to unsex a woman unnecessarily on account of such a fear was not good surgery.

Dr. Bovée, in closing the discussion, said that he did not believe any one would think that he would advocate an operation when it was directly contraindicated. Hirst, in the discussion to which he had alluded said that in hemorrhage the application of electricity by the positive pole in the uterus was the best treatment. Dr. Bovée did not agree with him. The method was too blind ; the operator had but a poor idea of the amount of electricity applied to any particular spot, how much effect was produced, etc. A better method was to put the patient to bed and keep her there as long as was necessary, two or three weeks perhaps ; pack the vagina, for severe bleeding, and use salt solution in the colon if necessary. He often resorted to this so as to get the patient into proper condition for operation.

He said that heart complications were often present ; sometimes the complication was due to the fibroid. By operating early we could avoid most of these complications. Ordinarily there was more trauma caused by myomectomy than by hysterectomy, especially when there were several fibroids ; myomectomy in such cases was liable to leave a deformed uterus which, on account of the danger of subsequent rupture, was worse than none at all. The symptoms resulting from removal of the uterus had been over-estimated ; they were practically *nil.* We did not expect to get good results in all cases of hysterectomy ; nor did we get good results in all cases of myomectomy. He did not say that he would operate on all cases because of a fear of malignant

degeneration, but because of this and other evil sequelae. The tumors should be removed, from the standpoint of pathology, rather than that of symptomatology, the same as in cancer of the cervix.

CASE OF GIANT-CELLED SARCOMA OF FIBULA.*

By J. FORD THOMPSON, M. D.,
Washington, D. C.

I removed this specimen yesterday from a boy nine years old. There was a bulging tumor below the left knee joint, involving upper third of fibula. It began eight months ago, and has never caused any discomfort whatever. I was inclined to think that the growth was an osteo-sarcoma, but uncertainty upon the point led me to do a more conservative operation than otherwise I would have done. The periosteum appeared healthy. The tumor was enucleated, and the adjacent bone was removed with rongeur forceps so that I should be on the safe side in case of malignancy. A perfect tube of periosteum was left, and this was filled with iodoform gauze, leaving a part sticking out of the wound for drainage. There was only slight oozing of blood. I would like to ask Dr. Lamb to have it examined microscopically, and will await the result with much interest. If the tumor turns out to be malignant, one would naturally expect an early recurrence of the growth. Nevertheless, some forms of sarcoma which have been completely enclosed by periosteum have been permanently cured by the operation that I performed in this case.†

[Dr. Thompson also showed another bony tumor; the specimen consisted of a section of tibia, removed from a woman 35 or 40 years old fifteen or eighteen years ago. An abscess, followed by a sinus, had formed in the upper portion of the tibia. The bone seemed quite soft. He curetted, leaving a shell, which rapidly filled with bony tissue, but the wound never cicatrized. He did three operations for the relief of the condition before he did a radical operation. He was obliged to do the last because of the constant suffering of the patient, removing the section of bone which he exhibited. He described the method which he used. Recovery was uneventful. The case was interesting in that a

*Reported, with specimens, to the Medical Society of the District of Columbia, March 29, 1905.
†Microscopic examination by Dr. J. B. Nichols showed the growth to be a giant-celled sarcoma.

woman 35 or 40 years of age should have had such a disease for so long a time and recover so completely ; she walks without difficulty and with a limp which is almost imperceptible. The almost perfect reproduction of bone was also remarkable. He only hoped that the boy's case would turn out as well.]

Dr. Barrie said that the specimen had all the appearance of a giant-celled sarcoma.

Dr. Vaughan said that it was impossible to tell the nature of the growth from mere appearance. It looked like a sarcoma, but it might very well be something else. Dr. Thompson did well not to amputate, as the disease might never return ; it may have been a form of osteo-myelitis. Syphilitic poison produced a growth which very much resembled sarcoma ; it often affected the fibula and phalanges.

Dr. Barrie said, as to malignancy, the giant-celled sarcoma was the least malignant of all. Dr. Thompson had done well in doing a conservative operation.

CASE OF RESECTION OF ELBOW JOINT FOR RHEUMATOID ARTHRITIS.*

By GEO. TULLY VAUGHAN, M. D.,

Public Health and Marine Hospital Service.

Young woman ; age, 24. Family history, rheumatic ; nine children ; one died of spinal trouble, and two or more of tuberculosis. She first had rheumatism when eight years old, and has had it or rheumatoid arthritis off and on ever since. At first the attacks came every six months or so, and after lasting about a month would gradually subside. One joint after another was attacked until nearly all the joints except the knee and hip were affected. There was also gradually increasing deformity, which interfered with the motions of the extremities. The upper extremities suffered most, particularly the elbows which finally became entirely ankylosed. I decided to break up these adhesions, not knowing, however, whether they were fibrous or bony. I had some misgiving as to the outcome of the operation, which was done April 3, 1903, under ether. Ankylosis was broken up, and motion restored to elbow joints. Afterward the joints were

*Reported with specimens to the Medical Society of the District of Columbia, March 29, 1905.

moved daily, in spite of the pain. After three weeks the condition was as bad as before operation. At the end of 26 days a second operation, like the first, was performed with the same after treatment. The same result as in the first instance was obtained, and I then advised a bilateral resection of the joints, which was performed February 23, 1904. [Dr. Vaughan described the method used, and exhibited the fragments which had been excised, showing bony ankylosis.] Recovery was uneventful, the patient leaving the hospital April 7. At that time there was a fair degree of motion. She stated a year afterward that she could use the arms for almost anything.

UNUSUAL CASE OF CANCRUM ORIS.*

By ARTHUR A. SNYDER, M. D.,

Washington, D. C.

Dr. Snyder said that while the result in this case was unfortunate, he reported it, as it was very instructive as well as interesting. A negro woman, age 23 and well-built, entered hospital March 10, 1905; had an ulcerated condition of the alveolar processes and under side of tongue on each side; the jaws were locked together. The line of ulceration was just below the teeth; there was irregular copious bleeding and a fetid discharge of saliva flowed in quantities from her mouth. Temperature, 99 to 100; March 23d it went up to 101.3 and there remained until March 26, when it rose again and the woman died. Urinary analysis showed 2 per cent. of albumen; no sugar nor casts. She was intensely anemic, there being 19,800 leucocytes and a little over 2,000,000 reds. It became impossible to feed her by mouth on account of pain, locked jaws and hemorrhage, which followed every attempt to introduce food. On examination, the bleeding appeared to come from beneath the tongue, and was so severe several times as to threaten life. Treatment was of no avail. She was later fed by enema, but ineffectually, and died of inanition. An autopsy was not allowed. The mouth condition appeared to be a modified form of cancrum oris.

* Reported to the Medical Society of the District of Columbia March 29, 1905.

RESOLUTIONS UPON THE DEATH OF Dr. A. C. ADAMS.*

WHEREAS, Dr. A. C. ADAMS, a member of this Society, departed this life January 1, 1905, therefore be it

Resolved, That the Society deeply regrets the loss of one who has been so long connected with it.

Resolved, That our sympathy and condolence be extended to his family, and that a copy of these resolutions be sent to them.

GEO. N. ACKER,
H. H. BARKER,
J. R. NEVITT,
Committee.

Dr. Arthur C. Adams was born in this city April 14, 1847. He shot himself, while laboring under mental aberration, at his home, December 31, 1904, and died at the Providence Hospital, January 1, 1905.

Dr. Adams graduated at the University of Michigan in 1870 with the degree of A. B. and received the degree of A. M. in 1873. He first studied medicine at the Howard University Medical School, and taught in the Classical Department at the same time. He afterward entered the Medical Department of the Columbian University, and graduated in 1873. He was Prosector of Anatomy in this institution from 1878 to 1879, and Demonstrator of Anatomy from 1879 to 1889.

In 1878 he married Miss Schneider, who died in 1888. After some years he married Miss Heitmuller, who survives him. He also leaves a son and daughter by his first wife, the second marriage being without issue. He was a member of the American Medical Association, the Medical Association, D. C., the Medical Society, D. C., the Masonic fraternity, and the Grand Army of the Republic.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, February 15, 1905.—Dr. T. N. McLaughlin, President, in the chair; over 45 members present.

Dr. Acker, chairman of the committee appointed to take action upon the death of Dr. Arthur C. Adams, presented a report, which was adopted. See p. 136.

*Adopted by the Medical Society of the District of Columbia, February 15, 1905.

As the next meeting of the Society would fall upon a holiday, February 22, it was ordered that the meeting be held March 1.

Dr. D. S. Lamb presented the following cases and specimens:

1. Four months fetus.

2. *Anencephalous fetus.* Discussed by Drs. Smith, Acker and Abbe.

Dr. Smith inquired as to the cause of anencephalus. Years ago *spina bifida* was said to be due in all probability to pressure, the scarcity of *liquor amnii* favoring pressure of the spinal column of the foetus against the maternal structures. The question was, could we fit this theory to an explanation of anencephalus?

Dr. Acker said that he had met with several cases in which he thought that the abnormality was brought about by attempts to produce abortion.

Dr. Abbe asked whether these congenital deformities—hydrocephalus, spina bifida, anencephalus, etc.—could be explained by any irregularity in the ovum at the time when it was a single cell? Was it not possible that some abnormality of the ovum itself, such as malnutrition, could produce the anomalies which were generally ascribed to changes in the growing fetus?

Dr. Lamb said that the cause was undoubtedly the cutting off of nutrition, but the question was, what cut it off? The generally accepted view was that the malformation was due to an adhesion of the amnion.

Dr. Vale exhibited and described a new instrument for estimating the number of red blood corpuscles in anemia and similar conditions. The instrument was the *Torsio-Hematocrit*, and was described in an issue of *American Medicine* of August, 1904, by Dr. Wetherill, of Philadelphia. Dr. Vale said that in office practice for over a year he had abandoned the tedious and eye-straining enumeration of red blood cells with the hemocytometer, which required at least half an hour, and now employed altogether the Deland hematocrit. In the mild secondary anaemias, which constituted a large part of those cases requiring blood examinations, and in which there was no great deviation from the normal size of the individual red cells, he had entirely satisfied himself that the hematocrit gave accurate information and that the estimation of the number of red cells per cubic millimeter from the percentage volume could be relied on. Examination of stained specimens permitted an enumeration of the leucocytes after the method of Einhorn and Laporte and at the same time a verification of the absence of marked change in the size of the red cells.

The Torsio-Hematocrit enabled one to make these examinations at the bedside. It was light, noiseless and inexpensive. As one might expect from the higher note emitted by it while in operation, the number of revolutions per minute was greater than with the electric centrifuge, so that it only required to be operated a minute and a half instead of three minutes.

With larger tubes the instrument could also be used at the bedside for cytological examinations of cerebrospinal fluid and pleuritic exudations; with Jenner's stain the specimen was ready for the microscope in a few minutes.

Dr. Henry A. Robbins read the paper of the evening. Subject, "The Social Evil." Discussed by Drs. J. Ford Thompson, Kober, R. S. Lamb, Carr and Chappell.

Wednesday, March 1.—Dr. McLaughlin, President, in the chair; over 36 members present.

The following persons were elected members by invitation: Dr. Alfred W. Balch, U. S. N., Dr. Charles F. Mason, U. S. A., Dr. Harvey W. Wiley, U. S. Dept. Agriculture, Dr. Bailey K. Ashford, U. S. A., and Dr. M. A. DeLaney, U. S. A.

The following cases and specimens were presented:

By Dr. J. Ford Thompson: Two cases of tubercular peritonitis. Discussed by Drs. Snyder, Carr, J. Taber Johnson, Mitchell, Shands and Acker. See p. 91.

By Dr. Carr: 1. Gunshot wound of cervical spinal cord. See p. 88.

2. *Urethral calculi.*—The stones were removed from the urethra of an old man who had an attack of typhoid fever, and as he grew weaker, became unable to pass his urine. Attempts to catheterize him having failed, Dr. Carr was called in. He used a sound, and detected the presence of the stone. An incision was made, under cocaine, behind the scrotum, and seven stones were removed from the urethra. A tight stricture existed in front of and behind the site occupied by the calculi.

Dr. Thompson said that he had met with several such cases. One was that of a child 10 years old, at the Children's Hospital. There was a partial obstruction to the flow of urine and abscess on the top of the penis. Upon opening it he found a calculus which had ulcerated upward to a point just beneath the skin. Another curious case was that of a man from Virginia. There was much obstruction to the flow of urine, and operation was decided upon. The man first went home to attend to some business, and while on the boat he urinated and a stone popped from the urethra into the river and was lost. Such calculi were easily removed, either by pushing them back or by cutting down upon them. To show how much a child can stand, he related an instance, the like of which he had never seen before. The boy had tied a string around his penis as tightly as possible up near the bone. When Dr. Thompson saw him the organ was hanging only by a few shreds.

Dr. C. G. Anderson read the paper of the evening. Subject, "Saline Infusions." Discussed by Drs. Carr, Barrie, Young, of Baltimore, and Keyes, of New York. See p. 107.

Wednesday, March 8.—Dr. McLaughlin, President, in the chair; over 38 members present.

Dr. Abbe presented a case and specimen: "Fracture of the Oscalcis." Discussed by Dr. J. Ford Thompson. See p. 120.

Dr. Motter read the paper of the evening. Subject: "Medical Education with Especial Reference to Physiology." Discussed by Drs. Carr, Acker, Woodward, Kober, S. S. Adams and A. F. A. King.

Wednesday, March 15.—Dr. McLaughlin, President, in the chair; over 52 members present.

Dr. H. D. Fry presented the matter of the *Physicians' Defense Company*, of Fort Wayne, Indiana. This company, for the annual payment of $15.00, guaranteed to defend the subscribing physician "against all civil suits for damages for malpractice * * * at its own expense, not exceeding $5,000 in defense of any one suit, nor exceeding $10,000 in defense of suits based on services rendered by the holder." Dr. Fry called attention to the fact that in a subsequent provision of its policy the company "does not obligate itself to pay or to assume or to secure the payment of any judgment rendered against the holder hereof, in any suit defended by it." He stated that the agent of the company is now going around in this city securing subscriptions from physicians, and saw Dr. Fry last week. Four or five years ago the same company sent an agent to him, and Dr. Bowen and he submitted the matter to Attorney Darlington for his opinion as to its legality. Mr. Darlington refused to recommend it. Subsequently, the agent quoted Mr. Darlington as endorsing the company, and many physicians went into it on account of his supposed recommendation. Recently, Dr. Fry had again laid the matter before Mr. Darlington, and in reply, received the following letter:

"Office, 410 Fifth Street, N. W.,
"Washington, D. C., *March 11, 1905.*

"My Dear Dr. Fry: The insurance policy of the Physicians' Defense Company, of Fort Wayne, Indiana, about which you ask my opinion, is rather an old story with me, and one not altogether to my satisfaction. Some years ago, an agent of this Company called upon me, stating that he had been requested by you and Dr. Bowen to have me examine the policy and give my opinion as to its value. I did so, reporting both to him and to you that I regarded the policy as a delusion, and worthless; shortly after which I was informed by several of my medical friends that they had been induced to insure with the Company upon the representation of the agent that I had examined the policy and approved it. From then until now I have from time to time learned of policies taken out by physicians upon similar representations upon behalf of the Company. Within

the past three months I was stopped on the street by a medical friend, who told me he had been informed that I had approved the policy, and that he was just about to take one upon that assurance.

"The trouble with the policy is that, after some glittering generalities, the tendency of which is to create the impression that the Company protects the physician to the extent of $5,000 in any one case, and to the extent of $10,000 during any one year that it is in force, it contains the further provisions following:

"'Said company does not obligate itself to pay or to assume to secure the payment of any judgment rendered against the holder hereof in any suit defended by it.'"

"In other words, the only protection the physician gets is an undertaking by the Company to pay the court costs and counsel fees in such suits as it defends, which are comparatively inconsiderable items, leaving the physician himself to pay such judgments as may be recovered against him under its management and control of his defense.

"Besides this, the glaring inadequacy of the protection, the Company reserves the right to employ the attorney to defend the case, the policy providing only that the physician 'shall have a voice' in the selection, which means practically nothing, and leaves the Company at liberty to select the most inexpensive legal counsel it may be able to do. It undertakes to do nothing until a suit against a physician has been actually commenced, so that, if a case should arise which the physician, for any reason, should desire to settle or compromise without suit, the Company is wholly out of it; and if, after suit brought, the physician should feel it desirable, or be advised by counsel, that the case should be compromised, the policy denies him the privilege of making a compromise, except upon terms of reimbursing the Company for all expenses it has incurred in the matter.

"At our interview the only advantage which the agent pretended to urge as afforded by the policy was that the Company, by reason of the great number of suits which it was defending, could furnish a fuller brief of authorities, and do so more quickly, than local counsel could—a claim absurd to a lawyer, for the reason, first, that from six months to a year always intervenes between the filing of a suit and the trial of it, on which latter occasion only can briefs be used, so that there is always ample time to prepare them, and, secondly and principally, because there is no legal question simpler or more free from doubt than the rules which fix and govern the liability of surgeons and physicians to their patients. In the most hotly contested case of this kind in which I was ever concerned, or have known to be tried in our courts, no law book was used on either side, the legal principles applicable to such cases being so simple and so firmly established that there was no

room for any question about them upon the part of either counsel or the court.

"If, of course, a physician desires to be protected against court costs and counsel fees in possible future suits affecting his professional reputation and standing, and for such protection, in addition to the premium, is willing to renounce his right to select his own counsel and to control and manage his own defence, it is unquestionably his right and privilege to do so; but it has been quite annoying to me to learn that the physicians of this District are being induced to take policies of this character upon the utterly unfounded representation that I have approved them. I shall take it as a personal favor if you can in any way protect me from such misrepresentation among the medical fraternity.

"Yours, very truly, J. J. DARLINGTON."

Dr. Woodward said that while he had no interest whatsoever in the company, he felt that in the interest of fair play the statements which had been made should not be permitted to go unchallenged. He failed to see how any one who read the literature which was circulated by this company could take out a policy with it under the belief that under the policy the company would be responsible for such damages as might be awarded against him by reason of malpractice on his part. The company strongly insisted not only that it did not undertake to pay such damages as may be awarded, but that the very possession by a physician of a policy under which the insurance company undertook to pay damages was an incentive to malpractice suits rather than a protection against them. In such suits the Physicians' Defense Company furnished the money and to a certain extent the brains to fight *with;* companies which undertook to pay such damages as might be awarded in such cases furnished the money for the dissatisfied patient to fight *for.*

A distinction must be drawn between fraud or misrepresentation on the part of the company and fraud or misrepresentation on the part of the agent. Whatever the rule might be in law with respect to this matter, it was not equitable, even admitting such fraud or misrepresentation on the part of the agent in this instance as had been alleged, to impute it to the principal, that is, to the company itself until evidence had been offered showing that the agent's improper action had been authorized or ratified by the company.

It was ordered that Mr. Darlington's letter be placed on record and that a brief of the discussion be published in the ANNALS.

The following cases and specimens were presented by Dr. Acker: Cancer of the lungs and liver. Discussed by Drs. Thomas C. Smith and Balloch. By Dr. D. S. Lamb, for Dr. Dillenback: "Monstrous Fetus."

Cancer of lung and liver.—A white woman, 60 years old. Dr.

Acker first saw her in the latter part of September, 1904. A history that for over a year she had suffered from pains in the right side, with constipation, and from time to time intense pains down to the bladder, with bloody urine. She passed at times a large quantity of blood. The physician in New York had made a diagnosis of stone in the right kidney. Two brothers and one sister had died (from 40 to 45 years of age) of stomach and liver trouble. One sister was living and in good health. For a week after his first visit she passed a small quantity of blood in the urine; no renal casts were present in any specimen.

Early in October Dr. Balloch saw her with him in consultation, and after a careful examination came to the conclusion that, on account of the symptoms, she had a malignant disease. In November she had a violent attack of inflammation of the stomach and bowels, vomited nearly everything taken, and had numerous liquid mucous stools daily. There was no blood in the urine after October. The stomach and bowel symptoms became better, but a severe broncho-pneumonia developed in both lungs. The rest of the family had influenza at this time. The pulmonary condition improved, but it was almost impossible to get her to take nourishment, and she died from inanition March 1, 1905.

Dr. D. S. Lamb made the autopsy, and reported that there was much emaciation, purpuric spots on front of chest, lungs studded with cancerous masses; heart small, calcareous aortic valve, but valve competent; liver large, studded with cancerous masses; some watery bile in gall bladder; spleen small, pancreas normal; stomach contracted; intestines normal, except some congestion and some appearance of blood mixed with intestinal contents; left kidney cystic, and pelvis contained a thick pus-like mass; very little normal tissue. Right kidney normal.

Dr. Smith said that in many cases the difficulty of making a diagnosis of cancer was appreciated by everyone; sometimes it was absolutely impossible. Were there any extraordinary means which would aid us in making a diagnosis? He asked Dr. Acker whether the blood examinations in this case showed anything significant. He asked a similar question of other members who were connected with hospitals having the necessary apparatus for making such investigations.

Dr. Balloch said he saw the patient once. She was then having hematuria. The pain was low down along the course of the left ureter. There was two per cent. of blood in the urine. At the end of micturition blood could be obtained by pressing upon the base of the bladder. His diagnosis was malignant disease of the left kidney.

Dr. Acker stated that blood examinations were not made, as the woman lived at a distance from the city. Examination of the sputum was negative; there were no tubercle bacilli.

Dr. H. W. Wiley delivered an address upon "The Effect of

Certain Food Preservatives upon Health and Digestion." Discussed by Drs. Kober, Motter, A. F. A. King, Wood, Woodward and D. S. Lamb.

A vote of thanks was extended to Dr. Wiley for his interesting and instructive address.

Wednesday, March 22.—Dr. McLaughlin, President in the chair; over 42 members present.

An appropriation of $147.01 was made for publishing No. 1, Vol. IV, of the ANNALS.

Dr. F. R. Hagner presented a case and specimen; Prostatectomy. Discussed by Drs. H. A. Fowler and Vaughan.

Dr. B. Rosalie Slaughter read the paper of the evening. Subject, "Report of the Pan-American Congress in Panama, and of the American Public Health Association in Havana, in January, 1905." Discussed by Drs. Vaughan, A. F. A. King, Acker, and Reyburn. See p. 95.

A vote of thanks was extended to Dr. Slaughter for her interesting and instructive paper.

Wednesday, March 29.—Dr. McLaughlin, President, in the chair; over 45 members present.

The following cases and specimens were presented:

By Dr. Vaughan: Double Resection of the Elbow Joint. See p. 134.

By Dr. J. Ford Thompson: Bony Tumor, probably osteo-sarcoma. Discussed by Drs. Barrie and Vaughan. See p. 133.

By Dr. Mitchell: Renal Calculi. Discussed by Drs. Vale, Bovée, A. F. A. King and H. A. Fowler.

By Dr. Snyder: Unusual Case of Cancrum Oris. See p. 135.

Dr. Bovée read the essay for the month. Subject, "Treatment of Fibroid Tumors of the Uterus." Discussed by Drs. Henry D. Fry, I. S. Stone, Smith, Vale, Reyburn, Hickling and J. Ford Thompson. See p. 121.

WASHINGTON MEDICAL ANNALS.

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Editorial.

Authors of papers published in the ANNALS are reminded that the Society has fixed a maximum length of papers at ten pages (about 4,500 words), beyond which number the Editorial Committee is required to make a charge of $1.50 per page.

Authors of papers are also requested to have them typewritten, since the typewritten copy is much easier to read, both by editor and printer, less mistakes are made, and the publication is saved some expense.

The collaborators are requested to take notice that as the ANNALS is published about the first of March, May, July, September, November and January, it is desirable that their contributions for publication should be in the hands of the Committee not later than these dates.

THE COUNCIL ON PHARMACY AND CHEMISTRY.

As was to be expected, the proposition to unveil the proprietaries has raised an outcry from the proprietors. An article in the *National Druggist* (St. Louis, April,) takes the American Medical Association to task rather savagely, accusing it of pride, vain glory and hypocrisy, and of resorting to the methods and the means of the labor union.

Two points made are, we think, not without weight: the one refers to an interference with proprietary rights granted by the Government, the other to the fact that decision is to be rendered, not as to the therapeutic value, but on the ethical status of the medicaments submitted to examination. As a matter of fact, these

two questions are inseparably connected. There is no doubt that the section of the Code of Ethics dealing with "the enormities committed by quackery" has been far more honored in the breach than in the observance. The medical profession has itself, very largely, to blame for the present unfortunate condition of affairs.

It would seem that the first question to be determined, with regard to any new remedy, is as to its therapeutic value. If it be indeed effective it will be employed, whether proprietary or not, as witness the large use of phenacetin, sulphonal, trional, *et cet.*, notwithstanding the fact that they have been patented. If after fair trial it be found ineffective, the proprietor cannot hope to force it on the profession, no matter what may be his rights in the preparation.

The ill-advised and often groundless certificates of virtue accorded numberless preparations are beginning to come back, boomerang-like, to smite their authors. Certain of the scientific organizations are attacking the problem from this standpoint, and the results should be even more promptly effective than the work of the Council.

After all, therapeutics is scarcely yet an exact science, there is a crying need and large room for the further development of the field of experimental pharmacology. The curricula of our medical schools are in sad need of a thorough overhauling. At present we need not look far to discover all the gradations between a multitudinous polypharmacy and an almost absolute therapeutic nihilism. If the graduate leaves his Alma Mater with no definite views of what is known of these subjects we can hardly blame him for flying from pillar to post in his eagerness to obtain results.

In this connection we may remark that the forthcoming edition of the United States Pharmacopoeia will afford timely aid on many of these questions. With this at hand, and the scarcely less valuable National Formulary, the practitioner will find less need of depending upon the unsupported statements of the commercialists. M. G. M.

Medical Miscellany.

The Eastern Dispensary and Casualty Hospital has been moved to its new quarters, on the corner of Massachusetts Avenue and 7th Street, N. E. This building is a large double house, situated in the center of a large and handsome lawn. After the purchase of the building the Board of Directors added another story to the main building and remodeled its interior, converting it into an almost ideal hospital. On the first floor is the handsome parlor and reception room, and back of that the Board room. In the back building is the emergency room, and in the rear of that the operating room. There are four wards, one each for male and female, white and colored patients, and a number of private rooms, all of which are bright and cheerful. The rooms for the Resident Physician, the Assistant, the Matron and Nurse are on the third floor. The building, being in the middle of a large lot, with no other buildings near, allows all of the rooms to be bright and sunny. There are two detached buildings in the rear of the main building, one of which has been arranged for dispensary purposes on the lower floor. The general medical, skin, gynecological, and eye, ear, nose and throat clinics, are on the second floor. The other detached building will be used as the stable. There will be an ambulance service. The Board of Directors and the Board of Lady Managers have been very energetic in doing all that can be done to make this a good and serviceable hospital. There has been a large amount of work done in remodeling and rebuilding, and the success of their undertaking was fully demonstrated to the large and enthusiastic gathering at the reception given by the Board of Directors and Lady Managers, Wednesday evening, April 26, in the hospital building. A number of the private rooms are already occupied by patients, and several operations have already been performed in the new operating room. This hospital with the ambulance service will fill a long felt want in this section of the city. C. R. Dufour.

Health Department, D. C.

Memorandum showing the relative prevalence of certain communicable diseases from January 1, to April 1, 1904, and the same period of 1905.

Diphtheria.

1904.			1905.		
Cases on hand Jan. 1, 1904...	17		Cases on hand Jan. 1, 1905...	47	
Cases reported from Jan. 1, to April 1, 1904.....	81		Cases reported from Jan. 1, to April 1, 1905.....	97	
Cases discharged, recoveries, ...		76	Cases discharged, recoveries		120
Cases discharged, deaths.....		10	Cases discharged, deaths.....		12
*Per cent. of fatal cases		11.6	*Per cent. of fatal cases.....		9.1
Cases on hand April 1, 1904..		12	Cases on hand April 1, 1905, ...		12
Total cases.....	98	98	Total cases.....	144	144

Scarlet Fever.

1904.			1905.		
Cases on hand Jan. 1, 1904...	36		Cases on hand Jan. 1, 1905...	49	
Cases reported from Jan. 1, to April 1, 1904.....	167		Cases reported from Jan. 1, to April 1, 1905.....	85	
Cases discharged, recoveries, ...		157	Cases discharged, recoveries		101
Cases discharged, deaths.....		3	Cases discharged, deaths.....		1
*Per cent. of fatal cases.....		1.9	*Per cent. of fatal cases.....		.98
Cases on hand April 1, 1904..		43	Cases on hand April 1, 1905..		32
Total cases.....	203	203	Total cases.....	134	134

Typhoid Fever.

1904.			1905.		
Cases on hand Jan. 1, 1904...	54		Cases on hand Jan. 1, 1905...	144	
Cases reported from Jan. 1, to April 1, 1904.....	82		Cases reported from Jan. 1, to April 1, 1905.....	68	
Cases discharged, recoveries, ...		87	Cases discharged, recoveries		170
Cases discharged, deaths.....		15	Cases discharged, deaths.....		13
*Per cent. of fatal cases.....		14.7	*Per cent. of fatal cases.....		7.1
Cases on hand April 1, 1904..		34	Cases on hand April 1, 1905..		29
Total cases.....	136	136	Total cases.....	212	212

Smallpox.

1904.			1905.		
Cases on hand Jan. 1, 1904...	4		Cases on hand Jan. 1, 1905...	1	
Cases reported from Jan. 1, to April 1, 1904.....	6		Cases reported from Jan. 1, to April 1, 1905.....	10	
Cases discharged, recoveries, ...		10	Cases discharged, recoveries		4
Cases discharged, deaths.....		0	Cases discharged, deaths.....		2
*Per cent. of fatal cases.....		0	*Per cent. of fatal cases.....		33.3
Cases on hand April 1, 1904..		0	Cases on hand April 1, 1905..		5
Total cases.....	10	10	Total cases.....	11	11

*The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

W. C. WOODWARD.

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Luce, Charles R.,	215 2d street, s. e.
Luckett, L. Fleet,	1419 Rhode Island avenue, n. w.
McAdory, Robert,	The Rochambeau.
McArdle, Thomas E.,	1120 16th street. n. w.
McCormick, John H.,	128 C street, n. e.
McGee, Anita N.,	1620 P street, n. w.
McGuire, James C.,	1725 H street, n. w.
Machen, Francis S.,	3018 13th street, n. w.
Machinek, Camillo H.,	1322 Rhode Island avenue, n. w.

McKaig, J. P., 2406 Pennsylvania avenue, n. w.
McKay, James C., 1739 S street, n. w.
McKimmie, Oscar A. M., The Valois.
McLain, John S., 1320 19th street, n. w.
McLaughlin, Thomas N., 1226 N street, n. w.
McNally, Valentine, Hamilton House.
Macatee, Henry C., 1116 13th street, n. w.
Mackall, Louis, 3040 Dumbarton avenue, n. w.
Mackall, Louis, Jr., 1409 30th street, n. w.
Maddren, Edith L., 142 A street, n. e.
Magee, M. D'Arcy, 1355 Corcoran street, n. w.
Magruder, George L., 4 Jackson Place.
Mallan, Thomas F., 820 Connecticut avenue, n. w.
Malone, W. P., 1510 H street, n. w.
Marbury, Charles C., 1121 14th street, n. w.
Marshall, Collins, 2507 Pennsylvania avenue, n. w.
Mason, Elijah L., Children's Hospital.
Mason, Robert F., 1706 Connecticut avenue, n. w.
Masterson, Wm. L., Stoneleigh Court.
Maxcy, Frederich E., 1118 Rhode Island avenue, n. w.
Mayfield, Clifton, 1335 30th street, n. w.
Mazzei, F. A., 128 Massachusetts avenue, n. w.
Medford, H. S., 151 C street, n. e.
Mellott, Samuel W., 76 R street, n. w.
Merriam, Arthur C., 1201 New Jersey avenue, n. w.
Merrill, Walter H., 1913 14th street, n. w.
Metzerott, John H., 1110 F street, n. w.
Miller, G. Brown, 1733 H street, n. w.
Miller, J. Preston, 2621 14th street, n. w.
Miller, Maurice E., 1618 H street, n. w.
Miller, Thomas, 1616 7th street, n. w.
Miller, W. L., 410 K street, n. w.
Mitchell, J. Ernest, 519 13th street, n. w.
Mitchell, James F., 1344 19th street, n. w.
Moran, John F., 2426 Pennsylvania avenue, n. w.
Morgan, Edwin L., 2315 Pennsylvania avenue, n. w.
Morgan, Francis P., The Clifton, 1336 Mass. avenue, n. w.
Morgan, James D., 919 15th street, n. w.
Morgan, W. Gerry, The Rochambeau.
Morris, George G., 815 14th street, n. w.
Morse, Edward E., 1527 I street, n. w.
Motter, Murray Galt, 1815 Belmont avenue.
Mulcahy, D. O., 813 5th street, n. w.
Mullins, J. B., 1431 Rhode Island avenue, n. w.
Muncaster, Otho M., The Rochambeau.
Muncaster, Stuart B., 907 16th street, n. w.
Muncey, Elizabeth B., 1337 R street, n. w.
Murray, Thomas Morris, 730 17th street, n. w.
Nash, Francis S., 1723 Q street, n. w.
Neff, Wallace, 1337 K street, n. w.
Nevitt, James R., 1820 Cincinnati street, n. w.
Newell, William S., 1510 H street, n. w.
Newman, Henry M., 2403 Pennsylvania avenue, n. w.
Nichols, J. B., 1331 N street, n. w.
Norris, Phebe R., 1109 14th street, n. w.
Ober, George Clark, 210 B street, s. e.
O'Donoghue, John Alphonso, 3311 N street, n. w.
Parsons, Alfred V., Takoma Park, D. C.
Parsons, Mary A., 1216 H street, n. w.
Perry George N., 1316 Q street, n. w.

Petteys, Charles Volney,	1822 12th street, n. w.
Phillips, W. F. R.,	1607 16th street, n. w.
Pickford, Edward F.,	1010 East Capitol street.
Pile, Mayne M.,	1332 R street, n. w.
Polkinhorn, Henry A.,	900 14th street, n. w.
Pool, Benjamin G.,	945 Rhode Island avenue, n. w.
Portman, Adeline E.,	Bond Building.
Prentiss, Daniel Webster,	1315 M street, n. w.
Prentiss, Elliott C.,	1305 Rhode Island avenue, n. w.
Ramsburgh, Jesse,	The Portner.
Rand, Charles F.,	1228 15th street, n. w.
Randolph, B. M.,	1744 N street, n. w.
Ray, Anthony M.,	Tenleytown, D. C.
Reede, Edgar H.,	1115 9th street, n. w.
Reeve, Jesse N.,	1628 19th street, n. w.
Reeves, William P.,	210 Delaware avenue, n. e.
Reichelderfer, L. H.,	Garfield Hospital.
Reisinger, Emory W.,	1209 13th street, n. w.
Repetti, F. F.,	149 B street, s. e.
Repetti, John J.,	404 C street, s. e.
Reville, Laura M.,	1017 14th street, n. w.
Reyburn, Robert,	2129 F street, n. w.
Rhett, Henry J.,	1309 Connecticut avenue, n. w.
Richards, Alfred,	312 South Capitol street.
Richardson, Charles W.,	1317 Connecticut avenue, n. w.
Richardson, E. E.,	400 7th street, s. w.
Richardson, J. J.,	1016 14th street, n. w.
Richey, Stephen Olin,	732 17th street, n. w.
Riggles, J. Lewis,	811 O street, n. w.
Robbins, Henry A ,	1750 M street, n. w.
Robins, William L.,	The Rochambeau.
Rogers, J. D.,	721 H street, n. w.
Roman, Frederick O.,	1435 9th street, n. w.
Roy, Philip S.,	North Capitol and L streets, n. w.
Ruffin, Sterling,	1335 Connecticut avenue, n. w.
Savage, L. S.,	Bennings, D. C.
Scott, James Foster,	The Albany.
Seibert, E. G.,	916 14th street, n. w.
Sellhausen, E. A.,	640 G street, n. w.
Shands, A. R.,	1319 New York avenue, n. w.
Shoup, Jesse,	Maryland avenue and 2d street, n. e.
Shute, Daniel K.,	1719 De Sales street, n. w.
Simpson, John C.,	1758 Corcoran street, n. w.
Slaughter, B. Rosalie,	The Gloucester.
Smith, Dwight Gordon,	3121 14th street, n. w.
Smith, Thomas C.,	1133 12th street, n. w.
Snyder, Arthur A.,	1227 Connecticut avenue, n. w.
Sohon, Frederick,	512 I street, n. w.
Sothoron, Elmer H.,	1921 I street, n. w.
Sowers, Zachariah T.,	1707 Massachusetts avenue, n. w.
Sprigg, William M.,	The Rochambeau.
Squire, Susanna J.,	1736 North Capitol street.
St. Clair, Francis A.,	1319 T street, n. w.
Staples, Aubrey H.,	Riggs House.
Staveley, Albert L.,	1207 Connecticut avenue n. w.
Steltz, Peter H.,	611 North Carolina avenue.
Stone, Charles G.	Brightwood, D. C.
Stone, Isaac S.,	1618 Rhode Island avenue, n. w.
Storch, A. B.,	142 E street, n. e.
Story, Leon E.,	1328 Maryland avenue, n. e.

Stoutenburg, John A.,	116 2d street, s. e.
Street, Daniel B.,	1102 9th street, n. w.
Strickler, W. B.,	815 M street, n. w.
Strobel, M. Louise,	16 R street, n. w.
Stromberger, H. H.,	109 I street, n. w.
Stuart, A. Rhett,	7 Dupont Circle.
Stuart, James,	937 R street, n. w.
Suddarth, James L.,	817 North Capitol street.
Suter, Henderson, Jr.,	3050 N street, n. w.
Suter, Norwood,	911 16th street n. w.
Tappan, J. C.,	11 R street, n. e.
Tayler-Jones, Louise,	The Woodley, Columbia Road.
Taylor, L. H.,	1335 H street, n. w.
Taylor, Thomas,	238 Massachusetts avenue, n. e.
Thomas, Ada R.,	The Thomas.
Thomas, John D.,	1603 19th street, n. w.
Thompson, Edgar D.,	1247 North Capitol street.
Thompson, Joseph Ford,	804 17th street, n. w.
Thompson, Millard F.,	484 Maryland avenue, s. w.
Thönssen, Wm. J. R.,	315 C street, s. e.
Tiefenthaler, B. F.,	516 10th street, n. w.
Tobias, Henry W.,	1424 Q street, n. w.
Toner, John E.,	Government Hospital for the Insane.
Tubman, James R.,	1222 11th street, n. w.
Tucker, Wm. Peyton,	2901 14th street, n. w.
Tyler, Abbie C.,	1126 12th street, n. w.
Vale, Frank P.,	1616 I street, n. w.
Van Rensselaer, John,	2 Thomas Circle.
Vincent, Thomas N.,	1221 N street, n. w.
Walker, Reginald R.,	1710 H street, n. w.
Walker, Louis A.,	704 New Jersey avenue, n. w.
Wall, Joseph S.,	1228 14th street, n. w.
Walsh, F. C.,	The Albany.
Walsh, John Edgar,	200 East Capitol street.
Walsh, Ralph,	1504 H street, n. w.
Walter, John,	1010 F street, n. w.
Walter, William F.,	713 4½ street, s. w.
Ward, William H.,	
Warren, G. W.,	1212 H street, n. e.
Watkins, Edgar W.,	2820 14th street, n. w.
Watkins, Samuel E.,	1246 10th street, n. w.
Weaver, Clarence A.,	1614 Q street, n. w.
Wellington, John R.,	1706 Rhode Island avenue, n. w.
Wells, Walter A.,	The Rochambeau.
Werber, Gustav,	1353 Q street, n. w.
White, Charles S.,	Emergency Hospital.
Whitson, W. E.,	418 6th street, n. w.
Wilkinson, Oscar,	1404 L street, n. w.
Wilmer, William H.,	1610 I street, n. w.
Wilson, Anne A.,	The Farragut.
Winter, Eugene C. C.,	815 4½ street, s. w.
Wood, George W.,	2904 P street, n. w.
Woodward, Wm. C.,	508 I street, n. w.
Yarnall, J. H.,	3028 P street, n. w.
Yarrow, Henry C.,	814 17th street, n. w.
Young, Parke G.,	939 M street, n. w.

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WASHINGTON MEDICAL ANNALS

TREATMENT OF ULCERS OF THE CORNEA.*

By S. B. MUNCASTER, M. D.,

Washington, D. C.

Most ulcers of the cornea, if treated in their incipiency, can be cured, and only a slight cicatrix will remain.

The treatment varies in accordance with the stage of the ulcer.

The cause of recent ulcers should first be considered : if from foreign body, cilia against cornea, growth on lids and conjunctiva, the cause should be removed.

In cases of corneal ulcer of the conjunctiva, resulting from catarrhal or other inflammations, the conjunctiva must be relieved with caustics, but not those that will irritate the eyes—such as sulphate of copper and strong formalin solutions, nor lead solutions, which leave opacity in the cornea. While the ulcer is progressing, zinc solutions, on account of irritation, do more harm than good.

I have been experimenting for three years with argyrol applied from half an hour to three hours where there is secretion due to conjunctivitis. This is an albuminate of wheat containing 33⅓ per cent. of nitrate of silver. You do not find any irritating effect even when strong solutions are used. With most patients I use 25 per cent., 120 grains to the ounce ; even this strength does not irritate as much as a weak solution of protargol or a ½ per cent. solution of nitrate of silver. And it is not as liable to produce argyrosis of the lids as the ordinary solution of nitrate of silver. Yet I must differ from those who claim it will not produce any discoloration of the lids, as I had a recent case of chronic conjunctivitis in which the daily use for three months of a 25 per cent. solution resulted in slight argyrosis, though it effected a complete cure.

*Read before the Medical Society of the District of Columbia, April 12, 1905.

The albuminate of wheat serves as a shield to prevent the oxidation of the silver, and, further, it acts as a lubricant to the inflamed surface. An additional means of preventing the discoloration of the lids when using argyrol or silver solutions, is to wear dark glasses, thereby excluding direct sunlight.

In some cases acid boracic, 10 to 15 grains to the ounce, is all that is needed if the ulcers are not infected.

Sulphate of atropin and homatropin are important drugs in the treatment of progressive ulcers. I often use the latter where the ulcer is beginning and in patients over 45 years of age. The inflammation of the iris and the irritation of the cornea are relieved and the ulcer benefitted. The pupils should be kept dilated as long as the ulcer looks foul and the eye congested. Sulphate of eserin is used in glaucoma and where you need a contracted pupil in marginal ulcers.

Bandages are important in most ulcers. They should be applied in a light and a firm manner. Where there is a recent ulcer, a simple bandage is necessary to protect the eye from dust and to prevent the lids from rubbing against the ulcer, thereby causing a constant irritation and pain from pressure on the exposed nerve fibers. It also prevents the ulcer being infected. The bandage should be applied until the ulcers become clean and the epithelium covers it to protect the cornea. When the floor of the ulcer bulges, a pressure bandage should be applied until a cicatrix is formed and to offer resistance to intraocular pressure. Contraindication for the bandage is when there is so much secretion as to prevent infection taking place from the microbes, &c. In ulcers resulting from conjunctivitis bandages are generally of no use.

Owing to the difficulty of retaining bandages on small children, it is frequently better to use dark glasses.

The majority of patients do well under hot applications to the eyes in corneal ulcers. The application should be made as hot as the patient can stand it, using about four thicknesses of gauze or linen about three inches square; keep several of these pieces in hot water, and change every half minute, so as to keep it hot for at least five or ten minutes; this to be applied every two or three hours during the day, according to the state of the ulcer. Gauze or cotton may be used with ease in pus cases, and it is well to burn it afterwards.

Cold applications are made in a few corneal ulcers where there is great oedema of the lids. Sometimes I alternate between hot and cold.

After the treatment of recent ulcer and it progresses to an extent to threaten the destruction of the cornea, I use tincture of iodine, as recommended by Dr. J. Lawton Hier. He advises the lids to be separated with a speculum after the eye is cocainized. Scrape the ulcer with a spud, apply the iodine on a piece of cotton twisted around a tooth-pick or an applicator. I seldom find it necessary to use an instrument to separate the lids. Have an applicator with cotton ready for use. After the eye is cocainized with a solution, 15 grains to the ounce of water, I separate the lids with my fingers, dry the part, and apply the tincture of iodine by rubbing the ulcerated edges; then let the iodine dry before closing the lids; use a wash of boracic acid, and bandage for 24 hours. Treat afterwards as any traumatic ulcer. The iodine should not be allowed to run over the cornea. You will generally find one application all that is necessary. If the ulcer returns in five or seven days, make another application. I have never had to use this medicine over three times. The tincture of iodine acts as an antiseptic and germicide, and it does not generally leave a scar, as you find with most caustics applied to the cornea.

Fluorescin, 10 grains to the ounce of water, is often used to outline the ulcer.

If the ulcer is very far advanced, so as to form a hypopyon, in addition to the iodine use the galvano-cautery or an instrument heated over an alcohol lamp to destroy all the edges of the ulcer. When the pus reaches the pupil, make an incision with a cataract knife into the cornea to let it escape. Open the aperture daily until all the pus is out of the anterior chamber.

There are many other remedies, such as carbolic acid, which is beneficial not only for its germicidal but its anaesthetic effects on the cornea. Formalin, 1 to 5,000, or weak salt solution, injected under the conjunctiva produces very good results.

If the cornea looks as if there will be a perforation, and we do not want to puncture it, the patient should be kept in bed to prevent any rupture of the cornea and the iris from being drawn into the corneal opening. When perforation has taken place the object is to keep the iris from adhering to the cornea and a firm cicatrix from being formed—by rest, bandage, atropine, &c. After the

iris has prolapsed it is best to use cocaine solution and perform an operation by pulling the iris out and cutting off as much as possible. Sometimes it is advisable to push the iris back and use eserin sulphate to retain it until the ulcer heals. This should be done in only recent prolapse of the iris. After the third day the iris begins to adhere to the walls of the wound of the cornea. At this stage a pressure bandage is a great benefit.

When the regressive stage of the ulcer is reached and cicatrization occurs, we should aim to use irritant remedies to make the cornea as transparent as possible. The best to begin with is weak irritants and then gradually use stronger. One of the best is calomel dusted in daily, or yellow oxide of mercury ointment. The vapor from hot water either with or without irritant solution. Theosonamin, dionin, massage and electricity are great aids to remove opacities of the cornea.

For illustration I will refer to some of the most frequent ulcers that we have to treat:

Phlyctenular ulcers, which occur most frequently with strumous children between one and fifteen years of age, should be treated in the beginning with atropin sulphate, $\frac{1}{4}$ to 4 grains to ounce of water, once or twice daily; boracic acid, 10 grains to ounce of water, with addition of 5 drops of solution of adrenalin chloride; use dark glasses and hot applications; a weak solution of cocaine may be used to advantage to relieve the intense photophobia. Cocaine, if often used, will be injurious to any corneal ulcer.

Tonics: cod liver oil, iron, quinine, arsenic and hypophosphites are frequently indicated. I have found syrup of iodide of iron a valuable remedy with children.

The diet and general condition should receive attention. No sweets or starchy foods should be permitted, nor food between regular meals; for a day or two give the stomach rest, with milk diet or broths, then begin with eggs, fowls, rice, etc.

Yellow oxide of mercury, 4 grains to ounce of vaseline, in certain stages of the ulcer, especially where there is phyctenular conjunctivitis. If the ulcer still progresses, the tincture of iodine and cautery may be applied. When there is much secretion, I rely on painting the lids with 120 grains argyrol to ounce of water, and boracic-acid solution. The different stages of the ulcer should be looked after to prevent opacities that would interfere with vision in the future.

Ophthalmia neonatorum is a disease we all dread, and when it reaches the point of ulceration of the cornea, then there is extra work. All of us know the importance of the preventive treatment of the mother to avoid this disease. When there is any suspicious discharge, catarrhal or otherwise, before the birth of the child it is advisable after washing the child's eyes with boracic acid solution to drop in each eye a solution of argyrol, 120 grains to ounce of water, instead of Crede's method, 2 per cent. of nitrate of silver. In some children, inflammation of the lids has been caused by strong solution of nitrate of silver.

Argyrol has produced such excellent results in the treatment of bad ulcers, and without any irritation of the eyes, that I recommend its use. As soon as the ulcer is recognized on the cornea use atropin sulphate, ½ grain to the ounce of water, on babies, and increase the strength, according to age, to 5 grains once or twice daily. Do not continue the atropin solution too long, as it might produce poisoning. Take a piece of cotton saturated with warm boracic-acid solution, hold it about one inch above the eye, open the lids with the other hand, then press the cotton so that the solution will wash out the pus ; apply one drop of 25 per cent. solution of argyrol every half to three hours day and night, according to the discharge of pus. Cotton may be used on side of face instead of pus basin, and it should be afterwards burned. I have seen babies sleep while being treated by this method, while if the nitrate of silver is applied they will not only wake up, but try to wake up the neighborhood.

Stimulate the cornea for 5 minutes every 3 hours by hot applications, using gauze, which is afterwards to be destroyed. It is necessary at times when the lids are much swollen to perform canthoplasty or grattage, but it is seldom done now.

The heavy solution of argyrol by gravity forces out the pus from the folds of the mucous membranes, so it is not necessary to use cotton or other substances to attempt to get rid of the pus between the lids, and it should not be permitted, as it is liable to abrade the cornea.

Recently two trained nurses used cotton saturated with solution of boracic acid in an attempt to remove pus from the anterior chamber of the eye, thinking it was between the lids. One of the cases was a child who had ulcers from gonorrhoeal ophthalmia and the other was a traumatic ulcer infected from dacryocystitis.

I do not wish to reflect in any way upon the skill of trained nurses, but they should be instructed not to use cotton in such cases, nor insert the end of a glass dropper between the lids to wash out pus secretions, as the rough substance is apt to cause abrasion of the cornea and render infection easy. There is no necessity for a dropper to be placed closer than $\frac{1}{4}$ to $\frac{1}{2}$ an inch to the eye in any case.

Patients with thickened conjunctiva require at certain stages a stimulating solution, and for this purpose I use solution of nitrate of silver, 10 grains to ounce, neutralized with weak solution of salt, applied once daily.

Corrosive sublimate, 1 to 5,000 of water, is often used to alternate with boracic-acid solution to wash out the pus and keep the eye clean, but it is more irritating.

In *gonorrhoeal* ulcers in men we use about the same treatment, but use nitrate of silver, 10 grains to the ounce, more frequently for stimulating in cases of thickened lids. We also use stronger solution of corrosive sublimate and sometimes iodine and the cautery to prevent spreading of the ulcers.

I wish to speak somewhat of *traumatic* ulcers. When you have an injury to the cornea from a thorn, scratch, instrument, foreign body, etc., examine closely with a magnifying glass for any particle of dirt. If anything is found, use an antiseptic solution with cocaine and remove it. If the injury has just occurred, use solution of boracic acid, if there is no sign of pus secretion, and bandage for 24 hours; then, with a few drops of boracic solution three times a day, the eye will get well in a few days.

In case there is any injury of the cornea, and it becomes infected from diseased conjunctiva, lachrymal sac, or nasal trouble, use argyrol, 25 per cent., every two hours; atropin sulphate, 5 grains to ounce of water, one to three times daily; hot applications, 5 to 10 minutes every three hours. The patient should remain quiet as much as possible, and keep the eyes protected by dark glasses. If the ulcer spreads, apply tincture iodine or cauterize the walls. If pus fills the anterior chamber to the edge of the pupil, make an incision with a cataract knife in the cornea to let out the pus; use a pressure bandage of gauze, and change often, to prevent the secretions from remaining closed in the eye.

The importance of early treatment with an infected eye is not

only to save the vision, but also the eye-ball from bursting, and a hemorrhage that might cause the death of the patient.

Glaucoma ulcers are treated three times daily with eserin sulphate, ¼ grain to ounce of water; argyrol solution, 40 grains to ounce of water, one drop every two hours, and hot applications. Be careful never to put atropin sulphate or any other mydriatic in a glaucomatous eye, as it will make it worse. When an ulcer forms in a glaucomatous eye it is generally necessary that an iridectomy be performed to relieve the pain and save the other eye from sympathetic troubles.

Catarrhal ulcers are benefitted almost immediately with argyrol, 25 per cent., three times daily. Some superficial ulcers of the cornea will constantly recur and give trouble even with the best medical treatment unless the refraction of the eyes is corrected by glasses.

I might speak of rodent, serpens, syphilitic and other ulcers, but I only wish to give a general description of the treatment, as there is not an exact method applying to all cases.

I have gained considerable information on this subject from the writings of Professors Fuch, de Schweinitz and others.

Dr. Butler said that a large proportion of the instances of blindness in the young resulted from corneal ulcers, the treatment of which had been neglected. He emphasized the difference of methods in treating idiopathic and traumatic ulcers. Dr. Muncaster had dealt with the local variety only. In treating the idiopathic kind it was first necessary to find the constitutional taint. In many of these cases the ulcers were due to malnutrition; the patients often had enlarged glands, a discharge from the nose, and the corneal ulcers made their appearance in crops. Here constitutional treatment should take precedence over local treatment; the latter alone would do but little good. Local treatment of the nose often did much toward bringing about a cure of eye ulcers. He took exception to the use of cocaine in this condition; it should be used very sparingly, as it tended to dry the cornea and to add to the existing trouble.

Two factors were of prime importance in the local treatment: 1. Keep the eye at rest by the instillation of atropine. 2. Keep the cornea clean by the use of antiseptics. He described his method of accomplishing the first object. As regarded local applications, carbolic acid, iodine, formalin and other antiseptics had practically the same effect; bichloride of mercury, 1-5,000, in vaseline made an excellent application. He commended the paper as being valuable and timely. The main object should be

to heal the ulcers as soon as possible, particularly those of the central variety.

Dr. Wilkinson said that in the phlyctenular ulcers in children, corrosive sublimate in 48-grain doses *t. i. d.*, had a specific effect upon the general health and indirectly upon the ulcers. This was the routine practice at the New Orleans Hospital when he was there, and he had used it since with good effect. He agreed with Dr. Butler as to the necessity for treating any nasal affection present. Adenoids should not be forgotten. Their removal would often prevent a subsequent attack. A new antiseptic, which had not been mentioned in the essay, was acetozone; he had found a solution of one or two grains to the ounce non-irritating and effective. He commended the use of argyrol in ophthalmia neonatorum; this, alternated with acetozone, he considered an ideal method of treatment. Another new remedy had not been mentioned, dionin, which was especially indicated in elderly persons with ulcers, who had a glaucomatous tendency. It reduced the tension and relieved the pain.

Dr. Wood took exception to the word "idiopathic." Idiopathic ulcers did not occur in the eye any more than anywhere else in the body. The causation of such ulcers could in almost every case be traced to the introduction of filth into the eye—from the nose, back of the hand, fingers or somewhere else.

Dr. R. S. Lamb expressed the belief that these cases should be treated by the specialist. The general practitioner of today, no matter how gifted he might be, could not know all the phases of medicine. Dr. Muncaster had mentioned ten or twelve different kinds of ulcers of the cornea, varying as to causation, malignancy, method of treatment, etc., and to cope with all of them was too much of a task for the general practitioner. Dr. Lamb took it for granted that no general practitioner would undertake to treat a serpiginous ulcer with pus in the anterior chamber; but not infrequently the general practitioner attempted to treat affections of the eye of a lesser degree of severity, often to the detriment of the patient. Dr. Lamb believed that bichloride of mercury placed in the eye and left there for any length of time was not without danger in view of the destructive action of the mercury on corneal epithelium, in spite of the vaseline as an excipient. Vaseline or some other ointment was valuable, as it tended to prolong the medicinal effect of the medicament; liquid applications often did good but for the moment. In his experience cocaine had not produced any irritating effect in ophthalmia neonatorum. He agreed with Dr. Wood as to the use of the word "idiopathic."

Dr. Polkinhorn said that the paper was equally interesting to the general practitioner and specialist. Too much time could not be given to the consideration of the subject. In some cases, the treatment should be local only, as for instance in ophthalmia neonatorum, but in the majority by far especial attention must be

paid to the general constitutional condition. Good food was better than cod liver oil for strumous children. Such children, with a nasal affection in addition to the corneal ulceration, usually recovered irrespectively of eye treatment, if the nose received the proper attention. Argyrol, while valuable in diseases of the eye, was by no means a panacea. There were as many different modes of treating ophthalmic ulcers as there were ophthalmic surgeons. Cocaine solutions, according to his experience, acted only temporarily to relieve pain, they must be often repeated, and in the end they retarded the healing of the ulcer. He strongly advised against giving to patients cocaine solutions of any strength for their own use at home, as such solutions were often injudiciously used. Bandaging the eye was often productive of much good, but it should not be employed in cases of infected ulcers; in the latter condition it was better to keep the patient in the dark than to employ bandages. In ophthalmia neonatorum, when the swelling was so great that the eyeball could not be exposed, he had seen good results from canthotomy. In conclusion he related a case of ophthalmia neonatorum, and described the treatment used.

CASE OF TYPHOID FEVER WITH COMPLICATIONS.*

By L. L. FRIEDRICH, M. D.,

Washington, D. C.

I wish to report the following case of typhoid fever, because of the many and serious complications which developed during its long-continued course. Mrs. S., age 25, white, German, married, housewife, the mother of two children, the youngest of which was six months old, had been sick several days before I was summoned to see her. She gave a history of chills, fever, pain in the hypogastric and ovarian regions, and in the back and head. This was accompanied by a profuse leucorrhea. On my first visit, in the afternoon of October 25, 1904, I found a temperature of 105.5. For several days the temperature was irregularly intermittent and remittent. I insisted upon having a nurse, who took charge of the patient the morning of November 2, and, with a second nurse subsequently engaged, remained throughout the case. During 25 years of practice I had never before seen such a complicated train of symptoms nor observed quicker response to drugs.

A glance at the remarkable chart will show you the unusual irregularity of the fever, the temperature often being 103 and 104

*Reported to the Medical Society of the District of Columbia, April 5, 1905.

for two days, then dropping to normal, again rising and again falling to normal and even subnormal, thus continuing an erratic course for three weeks, and then, without apparent cause, rapidly rising again. Complications then began to develop, being first manifested by gastric disturbances. Vomiting was very persistent, the ejected matter containing mucus and mucus mixed with bile. Drugs seemed incapable of controlling this most distressing symptom. As a rule, nausea and vomiting are rare in typhoid, but, as before stated, were most pronounced and serious in this case. The abdominal symptoms were greatly exaggerated and some of them proved grave complications. The eruption was the most extensive I have ever observed, petechiae of immense size and varying in color from bright red to dark brown and extending from the abdomen over the chest and back. The entire intestinal tract seemed to be involved, a severe diarrhoea alternating with dysentery developed, and to this condition were added many profuse hemorrhages.

Jaundice, one of the rarest of complications, became marked (Osler reporting only three cases in the last edition of his Text Book on Practice). About the thirtieth day of the disease there developed an acute lobar pneumonia which lasted for two weeks, leaving the patient with an annoying cough and other chest symptoms resembling acute phthisis.

Nephritis, accompanied by cystitis, was one of the most persistent complications. This pathological condition became so extreme that symptoms of uraemia supervened and marked general convulsions were noticed by the nurse, Dr. Frances Miner, who was called in the emergency, and by myself on several occasions. Dr. Phelps, who made numerous urinalyses in this case, repeatedly found casts and pus, and large amounts of albumen and biliary coloring matter. Suppression of urine, alternating with retention, became most aggravating symptoms.

The nervous symptoms were very severe. Besides convulsions there were delirium and coma, then subsultus tendinum, carphologia, a marked ataxic condition, and when these symptoms became less intense the patient had tenderness and hyperaesthesia along the spine and also extreme deafness. The heart beat was very strong during the earlier stages of the disease, but when it began to weaken, very promptly responded to strychnia and nitroglycerine. It was necessary to give these drugs hypodermically

for weeks, as the gastric complications were so severe that she could not take them *per orum*.

Herpes labialis, which is rare in typhoid fever, according to Osler, occurring only 29 times in 829 cases, was very marked in this case. Facial erysipelas also developed and was a source of much inconvenience to the patient.

Perforation of the bowel occurred at the end of the third month. The symptoms came very insidiously. Peritonitis and tympanites, which had been present several days, then became very intense; the abdominal wall was hard and rigid. There was a great fall in temperature followed by a rise which was accompanied by rigors. The pain was so intense that it aroused the patient from an almost comatose condition, causing her to cry out and then fall back in a state of collapse. Death followed in a few hours, mercifully ending one of the hardest fought battles for life that I have ever witnessed.

We are all familiar with the fact that typhoid fever may start or develop with pronounced nervous manifestations, or with pulmonary symptoms, or with such intense gastro-intestinal symptoms as to lead to a diagnosis of poisoning or appendicitis. We know, too, that the symptoms of acute nephritis found in some cases of typhoid may lead us to make an error in diagnosis.

In the case I am reporting we find all the foregoing forms combined. Then, the case exhibited not only the common complications, but nearly all of the possible rarer ones, such as convulsions, which were found by Murchison to have occurred in only 6 of 2,960 cases.

Erysipelas is also a rare complication, occurring only 10 times in 1,420 cases.

I have already indicated the rarity of jaundice as a complication.

When we consider that the case lasted for three months, and stop to think of the great anxiety of the family, the almost unendurable strain experienced by the attendants, and how hope would alternate with despair as there would be an amelioration of one set of symptoms, only to be followed by the development of others more severe, finally to end in death, I think you will agree with me that this was not only a case of great interest from the professional point of view, but also one of extreme sadness.

Dr. S. S. Adams said that certainly so far as complications went the case was unique. He spoke of the erratic course of the

temperature, and asked whether any steps had been taken which might account for the marked remissions.

Dr. Friedrich replied that means had been taken to control the temperature—cold applications, quinine per rectum, etc.

Dr. Adams said that this would amply account for the remissions. He had seen a drop from 105 to 96 degrees, as a result of the application of guaiacol and the administration of other strong antipyretics. Also, he had known of instances in which quinine caused marked remissions, but not to the extent shown on the chart, even in large doses. The course of the temperature was very remarkable. He suggested the possibility of a mixed infection; the quinine might finally have put an end to one of the forms. He had seen many complications in typhoid fever, but the more cases he saw, the more he looked for the unexpected; patients who were doing well, and apparently required little treatment, were just as liable as others to suffer from one of these explosions, parotid abscess, *otitis media*, or some other complication. One thing had impressed him concerning complicating abscess of the middle ear; he had seen cases where the patient gave no sign of aural trouble whatever, no pain or discomfort of any kind, only a slight irregularity in the temperature, and the appearance of pus was the first symptom to call attention to the local trouble. Erysipelas as a complication was certainly rare. He hoped that he would never have such a case as this. Dr. Friedrich had done well to keep the woman alive as long as he did. Dr. Adams' worst case lasted two and one-half months, and there were many complications. Nephritis as a complication was not unusual.

Dr. J. Dudley Morgan remarked that there was always something to be said in the discussion of typhoid fever. He had never met with erysipelas as a complication, but he had not infrequently seen instances of nephritis. He was accustomed to gauge the severity of the attack by the severity of the nervous symptoms; if they were not bad the patient, as a rule, had a good chance of recovery. Complications often occurred in the mildest cases; 50 per cent. of the perforations happened in mild cases.

Dr. R. S. Lamb said that the chart presented by Dr. Friedrich was one of the most remarkable that he had ever seen. He congratulated Dr. Friedrich upon what he had accomplished in the treatment of the case.

Dr. Nichols said that he had had one case of typhoid fever beginning with temporary icterus. Another typhoid patient he had satisfactorily fed by the rectum for a month, practically without any nourishment by the mouth.

Dr. Claytor said that although Dr. Friedrich stated that convulsions in typhoid fever were rare, he had met with three instances of this complication within a month. The patients recovered.

Dr. Acker brought up the question of the cause of the remarkable remissions in temperature shown on the chart presented by Dr. Friedrich. He had never known quinine to produce such remissions, and believed that they were due to some other cause. The administration of such drugs for the reduction of fever did more harm than good. Many cases of typhoid were over-treated; and in many instances the complications, particularly gastro-intestinal, were directly caused by over-dosing.

Dr. Friedrich said that at the end of three weeks he began to look for an improvement in the patient's condition, but it was then that the complications began to appear. As a rule, he never gave much medicine in the treatment of typhoid. The woman was accustomed to the effects of alcohol; she and her husband probably consumed a quart of whiskey every week. This might have indirectly caused the nephritis. The dose of quinine *per rectum* was ten grains. Early in the course of the disease calomel was administered in small doses, and it appeared to help the stomach as much as anything else. He did not know what caused the erysipelas.

Dr. J. Ford Thompson said that the temperature after the third week was of a septic character. Such temperature curves were frequently seen in surgical cases. The curve was typical of sepsis, and in his opinion the patient died from blood poisoning, not directly from the typhoid.

CASE OF FIBRO-LIPOMA.*

By J. FORD THOMPSON, M. D.,

Washington, D. C.

Girl, age 9 years. Had a tumor, much resembling a keloid, to the right of the coccyx. It had a wide pedicle, extending almost to the anus. The tumor itself entirely covered the anus. A lump was noted in this region at her birth; it had grown progressively until it reached its present proportions. Although aware that these growths often recur, I excised the tumor and also two much smaller excrescences which I believed to be of the same nature. If a keloid, the tumor was peculiar in several respects; it was a pendulous, pedunculated growth; was much larger than the ordinary keloid, and could not be traced to any original scar, although there might have been an early injury to the tissues resulting in the formation of cicatricial tissue. As regards treat-

* Reported to the Medical Society of the District of Columbia, April 5, 1905.

ment, Thiersch's skin grafting over the wound gives the best results. In my own experience, however, keloid growths almost invariably recur. Multiple scarifications sometimes cause them to shrink and disappear. Electricity has also given good results in some cases. It is curious that they are so much more frequent among the colored race, although they are by no means rare among whites.

Dr. Balloch said that the diagnosis of keloid was not clear in the absence of a scar. He had never seen a keloid like this one; it was too soft for keloid. The specimen much resembled a fibroma molluscum which he had recently seen in a patient in very much the same location. The lobulation did not suggest a keloid.

THE VALUE OF THE X-RAYS IN THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.*

By FRANK P. VALE, M. D.,

Washington, D. C.

Dr. Vale said that he had several times called the attention of the Society to the value of the X-rays in the early diagnosis of pulmonary tuberculosis. He thought the patient presented very nearly the earliest stage of the disease which could be demonstrated to the satisfaction of all, and because of the disparity existing in this case between the scarcely more than suspicious physical signs and the absolutely unmistakable evidence of the existence of the disease furnished by the X-rays, thought it might be of interest to some of the members to compare the physical signs with the negative of the chest which he presented.

The patient dated all his trouble from an attack of grippe about a year before. Six months ago he sought advice, as he did not feel quite up to par and had a slight cough. After examining his chest, Dr. Vale told him that there was a trouble beginning in the right apex, over which, however, nature would undoubtedly get the upper hand if he followed instructions. Dr. Vale did not see the patient again until a few days ago; the disease had progressed enough to suggest that the man had better give up his work for a few months. In the interval he had been exam-

*Reported and the patient presented to the Medical Society of the District of Columbia, April 5, 1905.

ined by a prominent and most competent confrere, who had frankly stated that he could find nothing to justify a diagnosis of tuberculosis. That was in November last.

The only signs now found were prolonged and slightly harsh expiration over the larger part of each lung posteriorly, and possibly very slight retraction of the right apex. With the fluoroscope the respiratory excursions of the diaphragm were noted as normal but attention was immediately attracted by the lessened permeability of the entire chest to the X-rays, with here and there a darker patch, the outline of the right clavicle being interrupted by such a patch at the apex of the lung on that side. In the negative, several of these patches could be seen pretty well outlined; both apices were indistinct as compared with other portions of the chest, and the permeability to the rays less than normal. An examination of many specimens of sputum failed to demonstrate the tubercle bacillus. To clinch the diagnosis he had given an injection of ten milligrams of tuberculin which resulted in a characteristic reaction: slight rise of temperature of a little more than one degree, and locally a few moist rales at the apices on deep inspiration, which were not present before the injection.

The fine rales at the apices resulted from the injection of tuberculin, and constituted the characteristic local reaction which always followed its injection in tubercular cases. Outside of the rales, which were not present before the injection of tuberculin, he thought that all would acknowledge that in the absence of any noticeable change in weight, in the absence of any fever, with a normal pulse and no bacilli in the sputum, there was but little to base a positive diagnosis on without the aid of the X-rays.*

Dr. Claytor said that the case was certainly interesting from the standpoint of diagnosis. He knew about the X-ray diagnosis of the disease only what he had read, and that was to the effect that such a diagnosis could not be made with any certainty until after the process was pretty well advanced. Dr. Vale seemed not to have proven his point, as all would agree that the man now had the physical signs of pulmonary tuberculosis, which did not require the X-ray to demonstrate, crackling rales over the apex of the right lung, high-pitched expiratory sound, etc. The first sign mentioned was as nearly characteristic of tuberculosis as possible. Nine out of ten patients who exhibited it had tuberculosis.

* The patient has since been been admitted to the Sanitarium at Saranac Lake. The case was regarded as such an early one the injection of tuberculin was to have been repeated, and was only abandoned on learning of the positive reaction obtained here.

Dr. C. Norman Howard said that Dr. Vale was at a disadvantage in attempting to demonstrate the appearances of the negative in a room in which the light came from all directions. As regarded the most pronounced shadow, which was considered a probable tubercular focus, it would be interesting to know where the anode was placed, as this influenced the relative positions of the shadows produced. Here, for instance, it might have come from the heart itself.

Dr. Acker believed that while the X-ray picture might be of value in a confirmatory way, diagnosis by this means alone could not be made until after the disease had advanced so far that the physical signs were pathognomonic.

Dr. J. Dudley Morgan said that the most surprising feature of the negative was the shadow on the right side. With this extensive shadow, he could not understand why the man did not have a marked evening rise of temperature.

Dr. Vale said that it was practically impossible to get a perfect picture of the chest. As to the rales, he had heard them this morning only at the left apex; he did not believe, however, that they existed there before the injection of the tuberculin. He had made the diagnosis from the X-ray negative six months ago, before any physician would have dared to have made a diagnosis from the physical signs then present.

CASE OF SPORADIC CRETINISM.*

By ISABEL HASLUP LAMB, M. D.,

Washington, D. C.

I first saw Hilda H., white, age 9, in March, 1900. She was the third of four children; the other three were normal. The birth of the patient was normal, and she grew naturally until 18 months old; had unusually good health, and none of the usual diseases of childhood. Both parents were living; the father's personal and family histories were negative; the mother's family showed a tubercular tendency, both maternal grandparents and an aunt having died of tubercular hemorrhage, and the mother herself had pulmonary hemorrhages six years ago.

In March, 1900, the patient was 27 inches high, and weighed 14 pounds; as stated, was ten years old; was unable to walk or make any intelligible sounds; only occasionally could control urination and defecation. She had the usual appearances of cre-

* Reported and patient presented to the Medical Society of the District of Columbia, April 12, 1905.

tinism : scanty growth of hair of lanugo type ; flat face, protruding lips ; tongue retained in the mouth except when she was angry ; then it protruded, and the saliva drooled. Her abdomen was prominent, and her back was the well-known "saddle" back.

She was put on thyroid feeding, and the difficulty of establishing tolerance and of securing its permanency when established are points of much interest in the case. Only very moderate doses could be given at first, about half a grain a day for nearly two months ; more than this caused nausea and dizziness. During the next two years the dose was pushed until two grains a day were given, and the improvement was marked. Her bowels

and bladder were controlled ; she could walk two blocks without tiring ; began to talk ; gained four inches in height and nearly ten pounds in weight ; her hair, and also the contour of her features, showed improvement.

At this time, 1902, she was removed to Winchester, Va., the husband having deserted his family and the support of the four children devolving on the invalid mother, so for the next two years very little was done in the way of treatment. Finally, Dr. Philip Boyd, of Winchester, was called to attend the mother, noticed the child, and by enlisting the aid of the eldest daughter was able to again institute the thyroid feeding. The tolerance previously established seemed permanent for the quantity then given, two grains, so that the patient is now getting three tablets

daily and can hardly be recognized as the same child. She is 40½ inches high, weighs 40 pounds, has a good growth of hair of normal type, can walk anywhere unaided and when she speaks is readily understood.

The etiology of cretinism seems illy defined. Except that it is most frequently found in mountainous regions, is often associated with the tubercular diathesis, and is to a certain extent hereditary, our knowledge of its causation is limited to the fact of the entire absence of or presence of only a rudimentary thyroid gland.

Where cretinism is endemic and hereditary it is often found in the children of parents who have goitre.

The pathology of the disease is associated with the nervous and circulatory systems. Mental development is inhibited, the patient either remaining in the infantile stage or becoming imbecile.

The blood pressure is low, and notwithstanding the excellent appetite there is profound anemia and leukemia, with mucin in the blood.

The short, thick neck is said to be due to hypertrophy of the salivary glands, caused by excess of mucin, and the prominent abdomen to enlarged mesenteric glands for the same reason, although I think this more likely due to the excessive forward curvature of the dorso-lumbar spine.

Horsley concludes that the thyroid regulates the formation of mucin, and Rogenitsch believes that its most important function is to elaborate a substance which neutralizes certain poisons of the body metabolism.

Until recent years treatment was *nil*, but during the last ten years thyroid feeding has shown good results.

Dr. Acker remarked that the history tallied exactly with that of a patient whom he had presented before the Society several years ago. The child was perfectly normal up to the age of 18 months; so it was in the case he presented; at 18 months the child had an attack of diphtheria, and immediately thereafter symptoms of cretinism appeared. He administered thyroid in half grain doses, increased to one grain; then the dose had to be cut down, owing to the symptoms which it produced; on the average, however, the dose for over a year was one grain. Under this treatment the child gained in every way, and the symptoms all but disappeared. When the child entered the hospital it was almost idiotic, and in a most pitiable condition; it improved

gradually under the treatment, and was now a bright, healthy child. It was two years and ten months old when it came under his care. The attack of diphtheria appeared to be the only etiological factor in the case.

Dr. S. S. Adams said that he now had under his care at the Children's Hospital a case of myxoedema sent there by Dr. Wood. The symptoms very closely resembled these described by Dr. Haslup Lamb: the thickened tongue was protruded, the skin was indurated, the mentality was deficient, and there was a general lack of development. The mother was tired of hearing the child called an idiot, and welcomed the suggestion of a possible cure. Dr. Adams began with one-grain doses of thyroid extract, and increased it after a week to two grains thrice daily. During the two weeks that the child had been in the hospital its condition had markedly improved. It was very rarely that one met with such an idiosyncrasy to the extract as was noted in Dr. Haslup-Lamb's case. It was unfortunate that these children must be given the extract as long as they live, at least at times. Myxoedema was very rare in this city; there had not been a case at the Children's Hospital since it was founded in 1870 until within two or three years. He had not met with a single case in private practice.

Dr. Wood said that the case mentioned by Dr. Adams was unique in that both the parents were healthy and robust. The child was the thirteenth addition to the family. No abnormality was noted until the time for locomotion came. The family was peculiar in that the children while young were very homely, but they developed into handsome adults; they lacked nervous stamina, however, and went to pieces in any emergency. They were purely American, and none of the relatives had exhibited any peculiar traits. By accident this child took 20 or 30 tablets of thyroid extract at once, but they produced no harmful effects. This child and another, which was also under his observation, presented marked characteristics of cretinism, and both had a certain animal-like intelligence or instinctive faculty; this was shown in their secreting and finding of objects, and the attentive watching of what was going on around them; their minds were active and they were very imitative, but they talked but little. The other child referred to was of German descent with a good family history. The cases appeared to be sporadic.

Dr. Claytor remarked that these cases followed the general rule; it was not customary for such children to show any abnormality until they were 18 or 24 months old.

GASTROENTEROSTOMY FOR NONMALIGNANT DISEASES OF THE STOMACH AND DUODENUM.*

By I. S. STONE, M. D.,
Washington, D. C.

What can be of greater interest to the physician than to learn how to successfully treat a class of cases which has hitherto refused to yield to his painstaking and persistent care? How gladly he welcomes a new remedy or perhaps a "short cut" to achieve the desired end, especially if certain patients become chronic invalids in spite of his most skillful attention. Not many years since, the writer had an opportunity of observing the result of an operation upon a gentleman who for many years had suffered from what his physicians called "dyspepsia," for want of a better name. This gentleman had submitted to routine treatment at the hands of our best physicians, and had found the stomach tube a necessity, in fact, a constant companion. Life had become one unceasing round of stomach washing and dieting, interspersed with various prescriptions and practical suggestions from many sympathetic friends. Finally, he was advised to see a consultant in another city, who referred him to a surgeon. The result was an operation for pyloric obstruction, which entirely cured the patient and enabled him to enjoy life. He can eat freely of any kind of food at any time of the day or night, and over the table he tells his admiring friends of the comfort he now experiences, and incidentally what a wonderful man is Dr. ———, who performed the operation. The recital of this story attracted my attention, and I was not a little interested to know that the consultant and surgeon of another city were selected to treat the patient.

Conditions Requiring Operation.—We have long since learned the value of gastro-enterostomy for obstruction due to malignant disease of the pylorus, and several members of this society have either reported cases or have discussed the question. In our own work we have hitherto limited our surgery to this class of cases with the object of merely prolonging life. The chief cause of the many cases of intractable dyspepsia is apparently ulceration of the stomach or duodenum. It is for the relief of acute or chronic ulcer or their results that so many surgeons have recently

* Read before the Medical Society of the District of Columbia, April 19, 1905.

invaded the field formerly occupied by the internist. Ulceration at the pylorus and its resulting contraction, or stenosis, have furnished the greater number of cases for surgical treatment. Besides these internal causes there are those due to external con-

striction or pressure. Peritoneal bands about the pylorus and upper end of the duodenum which are a result of cholecystitis or localized inflammation of the peritoneum, may cause obstruction. These obstructions in their turn cause dilatation of the stomach and gastroptosis. As the pylorus and duodenum are nearly fixed or quite firmly held in position, the descending stomach becomes

more and more dilated, and examination will occasionally show "angulation" at the fixed point near the pylorus. This "angulation" produces a very decided obstruction, and, strangely enough, has often been overlooked by those who have studied these diseases.

Frequency.—According to many writers, ulceration of the stomach is exceedingly rare, but there is good reason to think the disease has often been overlooked by pathologists. It has been claimed that from two to ten per cent. of the population of the world suffer from this disease. In Einhorn, we find that Brinton says that ulcer is found in five per cent. of all deaths. Bettmann, a pessimist, says that the number has been enormously overestimated by recent writers (*Lancet-Clinic*, Cincinnati, January 31, 1905). He says that Welch found only 9 in every 1,000 autopsies; Harlow Brooks gives the same proportion; Howard found 1.32 per cent.; some hospitals report 1.5 per cent.; only 82 cases were found in the Hopkins Hospital in fifteen years, or .18 per cent. Several other hospitals, aggregating 161,599 admissions, gave 930 cases, or .57 per cent. Only one hospital showed over 1 per cent. In Cincinnati, 27,567 medical admissions showed 24 ulcer cases, or .08 per cent. Bettmann flatly denies that there are so many cases of gastric ulcer. Stark, in Copenhaven, according to Mayo, found 13 per cent. of autopsy cases to have the disease. Griess, in Kiel, found 8.3. In Berlin, Bethold estimated the percentage at 2.7. Moynihan, a surgeon (*Lancet*, London, February 11, 1905), announces that he has seen in his own service 51 cases of duodenal ulcer alone, from 1900 to 1904, not to mention the many cases of gastric ulcer upon which he has operated. Seven of the 51 just mentioned were perforating in character, and in two cases gastric and duodenal ulcer were associated.

Location.—In Von Bergmann's Surgery it is claimed that simple ulcer is usually found in four-fifths of the cases on the posterior wall, and along the lesser curvature and toward the pylorus. In 100 cases mentioned by Brinton (Einhorn), 43 had ulcers on the posterior wall, 27 on lesser curvature, 16 at the pylorus, and 6 on both anterior and posterior wall. Other observers differ greatly from this. Nolte has seen ulcer most frequently upon the greater curvature, and, next in order of frequency, at the pylorus. Welch (Pepper, vol. ii, p. 503), has reported 793 cases, and of these 288 were on lesser curvature, 235 on posterior wall, 95 at the pylorus, 96 on anterior wall, 50 at the cardia, 29 at the fundus,

and 27 at the greater curvature. Moynihan and other surgeons have shown that duodenal ulcer is most frequent in the first 2½ inches of the bowel. He claims that reports which allude to solitary ulcers are for the most part incorrect, and declares the opposite to be true (*Lancet*, London, February 11, 1905). He finds duodenal ulcers in nearly half of his cases.

Influence of Sex.—Welch found 60 per cent. of cases in women, and 40 in men. Robson found chronic ulcer in males, 72 per cent.; in females, 28 per cent., but thinks that as many women as men are operated upon.

History.—Hemmeter, Robson and nearly all other authors give Cruveilhier the credit of being the first to correctly describe gastric ulcer and to distinguish it from cancer (1829). Next, we find that Rokitansky in 1839 reported a study of 79 cases. Later, Virchow, in 1855, taught that gastric ulcer was due to thrombosis and that hemorrhage was due to digestion of the clot.

Symptoms.—A comparison of the various symptoms of gastric ulcer, by consulting the medical and surgical authorities upon the subject, will almost inevitably bring confusion and drive any reader to despair, should he attempt to reconcile the widely diverging opinions of the writers. Perhaps no greater advance has been made in any branch of medicine than in the department of "gastro-enterology." But we nevertheless observe that the same difference exists between the views expressed, as marked the history of para- and peri-metritis, and salpingitis, or of typhlitis, perityphlitis and appendicitis. One set of observers declares that gastric ulcer is only rarely seen, while another, and by no means a small number of men, are demonstrating at the operating table upon the living subject, relatively more cases than have been found in the autopsy chamber. Evidently what some call ulceration may not be considered really a loss of substance, but rather an erosion (Dieulafoy). We are inclined to think that the symptoms of hyperchlorhydria are almost synonymous with those of ulcer, and he must be a close observer who can be absolutely certain that ulceration does not exist in many of these patients when hemorrhage has not occurred to indicate ulceration. In a large majority of instances the patient will be found with the symptoms of hyperacidity, and after these disappear and he becomes worse, then the fear of malignancy will occupy his mind, and for a time puzzle the diagnostic resources of the physician.

Einhorn says that the patient with hyperchlorhydria will at first have an "uneasy sensation" two or three hours after dinner. Later on the distress will come on after each meal and will last an hour or two and then cease. It will appear to most of us that the relief here mentioned would be experienced in any case of ulcer after the stomach had been emptied of its food. With this distress or pain is the associated pyrosis, gastric tenderness and abundant HCl. Nausea and vomiting may be or may not be present in either hyperacidity or ulcer. Mayo says that vomiting is usually associated with obstruction, and he finds this symptom present after ulceration has done its work. In persistent ulceration, however, the pain and other symptoms will be apt to prevent the patient from taking sufficient food, and he may become afraid to eat solids and confine himself to liquid diet. Should hemorrhage occur and persist, all the symptoms become aggravated and the patient soon becomes cachectic. It is of course at this stage that cancer will be suspected. Pain is usually of a burning character, but is often only a "tightness," and in only a small number of cases, confined to "one small spot," as claimed by some authors. It has been said that the presence of food and its contact with the ulcer will cause increased pain. For instance, if the pain is worse when lying upon the back the ulcer will be found upon the posterior wall of the stomach. This pain may be relieved when the patient turns upon the face.*

It would appear to us that the surgeons and the internists differ greatly regarding the symptoms of ulcer. The internists usually rely upon the presence of hemorrhage with pain as proof of necrosis, while a number of surgeons have claimed that ulceration is frequently present without evidence of loss of blood. It is apparently true that hemorrhage is most frequent in acute ulcer, as a large number of reports show the absence of this symptom in the chronic cases. That a small quantity of blood is often lost without detection is beyond question. One author claims to have found blood in the stools of 50 per cent. of all ulcer cases. Melaena is present only in case of quite free hemorrhage, and its presence will usually confirm the existence of severe local disease, manifested later by other constitutional symptoms.

*We give this symptom only because it is mentioned by authors, and have no reason to think it reliable, for the simple reason that the muscular action of the stomach will bring the food in contact with all parts of the organ. It is folly to claim that food *per se* is an irritant to the ulcer, and we rather think the rhythmic contraction of the stomach alone sufficient to produce the pain.

One or more of the following symptoms will usually justify operation: Persistent nausea, vomiting, tenderness, pain or cramps, pyloric "insufficiency" (this means that the pylorus is insufficiently open), gastric dilatation with return of food or else prolonged retention of food, emaciation, and invalidism. Moynihan says that (*Lancet*, January 31, 1903,) "intractable dyspepsia is clearly an indication for operation for relief of ulceration," * * * "the patient will become thin and shrunken or cadaverous and of gloomy aspect. He occupies his time, and his whole thought is concentrated upon his stomach. He will consider every article of diet carefully before taking it, and by degrees will abandon this dish and then the other until he is finally reduced to fluids alone." He says that pain immediately after eating may show the presence of gastric ulcer, and that this may be followed by relief, and then a recurrence of pain may show the presence of ulcer of the duodenum.*

Mayo says that chronic ulcer and obstruction at the pylorus will cause stagnation or retention of food, fermentation and dilatation, vomiting and emaciation. His examination of 2,400 patients by test breakfast and stomach tube, brought nearly 800 to operation (*So. Med. and Surg. Jour.*, No. 1, Vol. III, Jan. 1905). He has found the mechanical and clinical examinations in the main correct and satisfactory, while the chemical and microscopical evidence was of little value. He admits the generally accepted opinion regarding the presence or absence of HCl, although he, with several other observers agrees that the absence of HCl alone, is not proof of the presence of carcinoma. (My second case had no free HCl in her stomach.) Robson says that operation is demanded in those cases having pain or vomiting after eating, with tenderness in the epigastrium and hematemesis. Neither of these symptoms need necessarily be present. Operation is also necessary in certain "unexplainable gastric catastrophies" which are probably due to perforation.

Diagnosis.—As the symptoms of hyperchlorhydria, ulcer and carcinoma are frequently merged into each other, it will be necessary to eliminate the chief functional disorder which simulates ulcer on one hand, and also to exclude the most dangerous organic change (carcinoma) upon the other. As in all cases where cancer

*Moynihan mentions the "hunger pain," which is relieved by a glass of brandy, but which is often made worse by water alone. This we regard as pure theory.

is suspected, the tendency is to attack all cases at the earliest possible moment if we hope for cure by operative means. As we have the symptoms of carcinoma frequently engrafted upon those of ulcer, it is of supreme importance to establish the diagnosis at an earlier period than has been our custom. It may be claimed with good reason that the only hope for successful eradication of carcinoma of the stomach lies in the possibility of earlier detection of malignancy than has heretofore marked our management of this disease. We fear that many diagnoses of simple ulcer have been made when carcinoma had already claimed its victim. If we wait until absence of hydrochloric acid and the presence of a tumor have established the diagnosis of carcinoma in order to prove that the patient has or has not ulcer, then the time for radical cure of the disease is probably past. It seems to us that instead of persisting in a prolonged course of experimental treatment, during which time the patient is going from bad to worse, it would be better to operate early for the ulcer, and in this way many carcinomas will be detected at a time when their removal will give the best results. As no important advances have been made recently in the diagnosis of ulcer, it is not our purpose to quote the stereotyped views of authors upon this subject. It may be considered that all cases that have resisted the well known methods of treatment for functional disease or ulceration are subjects for operative treatment if the disease does not yield to ordinary measures in a reasonable time. The presence of pain after eating; of localized tenderness upon pressure; of hematemesis, or melaena, etc., are the chief diagnostic signs which indicate the presence of ulcer. Add to these symptoms the result of chemical and microscopical examination, and we think a diagnosis can be made with sufficient accuracy for all practical purposes. Dilatation is readily recognized by the usual methods of temporary distension, and in the absence of a tumor at the pylorus, such a case may be considered nonmalignant. It may be taken for granted that an immensely dilated stomach will not be associated with carcinomatous obstruction at the pylorus. The rapid advance of the disease will prevent, or will not allow time enough for great dilatation. For practical purposes, then, we must distinguish between hyperchlorhydria, ulcer, carcinoma and will occasionally find that gall stones will explain the symptoms.

Causation.—What shall we say of the cause of ulcer when we all

know that swallowers of nails, knives, keys and all sorts of small hardware do not have ulceration. It is well known that coarse food does not, as a rule, cause ulcer among the hard working people. (See Ewald.) Rokitansky thought that hemorrhagic erosions preceded ulcer. (Ewald, Ed. 1892, pp. 223 and 224.) Ulcer does, however, occur as a result of blows upon the stomach, or may follow convulsive seizures. Cohnheim mentions alkalinity of the blood, also hyperacidity of the stomach contents. (Ewald.) Ulcer has been produced artificially by ligating the portal vein. (Müller, 1857.) Pavey showed that the same result followed ligature of branches of the gastric artery. Virchow, in 1885, suggested the thrombonecrotic origin of peptic ulcer, and thought the clot was digested by the gastric juice and that the hemorrhage was explained in this way.

Prognosis.—It is estimated by many authors, including the surgeons, that at least 50 per cent. of cases of ulcer of the stomach recover without bad symptoms. (See Rodman, *Jour. Amer. Med. Ass.*, Sept., 1904, p. 801.) DeBove and Remond also say that 50 per cent. recover and that 13 per cent. produce perforative symptoms; 5 per cent. of these are dangerous or fatal. These authors believe that tuberculosis is induced in a large proportion of cases, according to Einhorn in 20 per cent. There is an estimated mortality for all cases, direct and indirect, of 30 per cent. (Einhorn), Heydenreich says 25 per cent. Mayo, Robson and Moynihan claim that 20 to 25 per cent. of all medical cases of ulcer die. Hamilton says the mortality is even higher, or 30 to 50 per cent. Bettmann says that this mortality is overestimated, and quotes Fenwick, who says that only 4 per cent. die. Leube in 556 cases lost 2, or .4 per cent., and had 96 per cent. cured or relieved. Saundby lost one in 100 cases; Fleiner not one in 300 cases. In the Cincinnati Hospital there were only three deaths in 15 years. (Bettmann.)

Implantation of Carcinoma Upon Ulcer.—Many surgeons, including Mayo, Murphy and Wathen, believe that carcinoma is frequently implanted upon an ulcer base. Mayo quotes LeBert, that 9 per cent. of ulcer cases become cancerous. Bettmann, however, says that LeBert meant that 9 per cent. of cancers may have an ulcer base. Rosenheim makes a smaller estimate, 6 per cent. The reports of hospitals show such a difference in their estimates of ulcer cases that we must admit them unreliable. Osler says that

in 150 cases of carcinoma only 4 had previously had ulcer. He believes that a history of dyspepsia affords no reason to fear the advent of carcinoma. Hirschfield, in a critical review of hospital statistics, claims that ulcer patients are not prone to cancer. (Die Beziehung zwischen Magengeschwür und Magenkrebs, *Cong. f. innere Med.*, Weisbaden, 1902, p. 279–289.)

Recurrence of Ulcer.—Mayo quotes a report of the London Hospital (*So. Med. and Surg. Journal*) which shows that in 500 cases of ulcer, 1897 to 1902, 211 had previous attacks of the disease and had been reported cured; 18 per cent. died, and 42 per cent. were not cured when they left the hospital.

Indications for Operation.—McGraw (*Trans. Mich. Med. Soc.*, 1901, p. 346) says that one of the most important indications for operation is the increasing tendency to vomit food which has been retained longer than necessary; also in catarrhs, ulcerations or reflex irritations, or to give the stomach rest. He never waits for the development of a tumor, although he considers the presence of a tumor not always proof of its malignant nature. Like many others, he finds but little comfort from chemical examinations of stomach contents. Dr. Davis (*West. Surg. and Gyn. Assn.*, 1889, p. 194) thinks "stagnation of food" is of first importance as an indication. 2d. He mentions cicatricial stenosis, due to healed ulcer or possibly valvular obstruction, a result of peripyloritis with adhesions to adjoining viscera, or a short gastrohepatic omentum or gastroptosis. 3d. A lessening of gastric motility from adhesions or atony. 4th. Pressure from without. 5th. Muscular hypertrophy of pyloric sphincter, spasm, etc. Doyen has said (see Davis' article) that "the one phenomenon which dominates the pathology of the stomach is evacuation of its contents." * * * "The pylorus is the enemy; its irritability is the cause of the most diverse gastric derangements and of the stubbornness of the anatomical lesions which accompany them." (Quoted by Davis). This opinion is shared by Carle (*Arch. f. klin. Chirurg.*, *LVI*, p. 1) and a host of other surgeons. Sheldon (*Ann. Surg.*, Jan., 1905,) also emphasizes the importance of affording an easy exit of food from the stomach, and especially refers to the toxic results of fermentative conditions. He claims that the profound anaemias, the neuroses and gastric tetany, are a result of pyloric obstruction. Robson (*Lancet*, London, Nov. 26, 1898, p. 1392), Fleiner (*Arch. f. Verdauungskr*, Berlin) Carnegie, *Ann.*,

Surg., April, 1904), and other writers have similar views. Sheldon says pointedly, "Any case of severe and long-continued dyspepsia that resists all the generally advised methods of treatment, and shows no improvement after giving the stomach rest for two weeks by rectal feeding, should be submitted to operation. Robson says that a disease which can be treated surgically with a 5 per cent. instead of medically with a 20 to 50 per cent. mortality, should be given the benefit of the operation (*Brit. M. J.*, Feb. 2, 1901).

Moynihan, in a recent paper (*Lancet*, February 11, 1905), is indeed optimistic, and we must quote from him once more. He alludes to the introspective patient whose whole life has been regulated by his stomach, and now has gastroenterostomy for ulcer. "He can eat what he likes in any quantity he likes, and he rapidly puts on weight, and his general sense of wellbeing is almost beyond belief. From such a misanthrope be becomes an enthusiast, an optimist. I have often wondered with a certain amusement what would have been the result of a timely gastroenterostomy upon Thomas Carlyle. He might have taken to the writing of comedies, and threatened the throne of Congréve, and his portrait twelve months after the operation, viewed side by side with that done by Whistler, would have proved an eloquent advertisement for his surgeon."

Choice of Operation.—The first operation for nonmalignant ulcer was performed by Rydygier in 1881. According to Bull, in "Von Bergmann's Surgery," Peter Frank (1745–1821) wrote upon the modern treatment of "Ulcus Ventriculus," which, we suppose, was based upon theoretical observations. Surgeons generally have learned to perform the various operations for carcinomatous obstruction, and it is only another application of the work to still further use these measures for nonmalignant disease. Various modifications of the original methods have necessarily been made which are applicable to the cases we now propose to treat, and for the excellent reason that without the fear or even the certainty of malignancy, we may provide for improved physiological conditions, instead of merely hoping to prolong life. Without discussing the various operative methods, we have only time to say we favor no special method for all cases, and while we are now discussing "gastroenterostomy" and not "pyloroplasty," we are by no means certain that certain cases of dilatation are not

better treated by the latter method. However, the retrocolic method has been the one to most favorably impress us, and we are highly pleased with it when there is a necessity for stomach rest and drainage. It would appear that our present methods may be relied upon to prevent the "vicious circle," and we have good reason to believe that even the fear of "peptic ulcer" may be obviated. As the method now used permits union of the jejunum and stomach very high up near to the ligament of Treitz, it is believed that this accident may not frequently occur.*

Case 1. Mrs. B., colored, age 33, was admitted into the Columbia Hospital January 4, 1905. She was an Opara; had no children. Besides the conditions for which she was admitted, namely, salpingitis and myomatous degeneration of the uterus, for three weeks previously she had pain in the region of the liver and stomach, with nausea and frequent vomiting. She had lost flesh, was poorly nourished, and was constipated from lack of sufficient food and also because she had a rectal stricture. The pains in the stomach and about the gall bladder were rather indefinite in character, and we were inclined to the opinion that she had gall stones. It was impossible to obtain even a tolerably correct account of her previous clinical history or treatment. She may have had syphilis, but we failed to discover any other sign than the rectal stricture. The stomach was not greatly dilated, and we infer that her condition was a result of the contraction which follows ulceration about the pylorus. Our operation, therefore, was exploratory, and we were surprised and somewhat disappointed not to find gall stones. January 11 we opened the abdomen by the Kehr incision, and found what Mayo, Ochsner and others consider sufficient reasons to prove the necessity for the operation which we are discussing. Along the upper border of the stomach we found several enlarged (inflammatory) glands under the peritoneum, and also decided thickening of the pylorus and adjoining duodenum. We found but little if any evidence of former peritoneal inflammation in this vicinity, and we confess that we operated in this instance entirely upon what others having large experience insist are good and sufficient reasons.

Our diagnosis for operative purposes was chronic ulcerative gastritis, the ulceration having already healed. The duodenum

* The accompanying cut shows the method used. It is adapted from Mayo, with the usual acknowledgments.

was certainly smaller than normal at the upper extremity, and we now think that the former ulceration must have been greater here than in the stomach. We had no history of hemorrhage, and although this patient was not able to remember accurately many of her former symptoms, still we think the sight of blood would have made a lasting impression which she would not have forgotten. Having made a careful examination, we proceeded to perform gastroenterostomy by the suture method, very much as we had seen it in the hands of Prof. Hans Kehr in Halberstadt. The jejunum was found, and a point selected about ten inches below the ligament of Treitz (where it escapes from behind the peritoneum), which was marked and held by an assistant. The omentum and transverse colon were raised and an opening made into the lesser peritoneal cavity, through which the stomach was made to protrude, this being accomplished without the least hemorrhage, when the omentum was divided. Not having Doyen's long forceps with which to clamp the viscera, we proceeded to unite the intestine to the stomach at the lowest point in the greater curvature, and aimed to extend this line of union upward from the central line of the organ along which runs the gastric artery. The suture material in these cases was chromicized No. 1 catgut, and the material has given us perfect satisfaction. We saw Prof. Kehr use large silk for this purpose, and, as all know, the Mayos use linen thread. The posterior suture extended from left to right $2\frac{3}{4}$ inches, and then the suture was laid aside to be used in completing the last line of peritoneal sutures on the anterior aspect of the new union. At this point the jejunum was opened along the entire length of our previous suture, and we now completed the entero-enterostomy by the Murphy button, which required only a few minutes additional time. This was to prevent the "vicious circle," and really does appear to be a very satisfactory method of obviating all danger of this serious complication. (The McGraw elastic ligature should give equally good results.) We next proceeded to open the stomach above our line of sutures and clamped one or two vessels which bled freely.

At this point we should carefully examine the interior of the organ and also ascertain the capacity of the pylorus. Next the closure of the mucous and muscular coats of the intestine, and stomach was *completed*, and finally the suture first used was taken up and a second line of continuous sutures placed outside the first.

Finally, closure of the afferent bowel above the button. After one uses this admirable method he can appreciate the advantage to be derived from a larger opening in the stomach than that made by the button. Indeed, the tendency now is to excise a piece of the stomach, and we see that Moynihan, Weir and Draper have done this. After the stomach is returned to its former position the fenestrum is upon the posterior surface of the lower portion of the greater curvature, and we complete the operation by placing the mesentery snugly and firmly around the junction of intestine and stomach. The mesentery is usually sutured to the stomach just above the point of union, but the only reason for making a careful closure is to prevent the possibility of admitting a loop of bowel through this opening, which has happened with fatal result from bowel obstruction. We now made a central incision below the umbilicus and removed the small tumor from the *fundus uteri*, and also the left tube and ovary. The operation lasted at least two hours; as we were anxious to locate all of the disease, considerable time was spent in searching for any possible pathological condition. The patient vomited a little blood after the operation, but had comparatively little pain, and was propped up in bed at the end of the second day and made an ideal recovery in every respect, save a wound infection of the lower incision. The chart will show the extent of this trouble, but her comfort and wellbeing appeared to be very little disturbed by the elevation of temperature. Her pain promptly disappeared, and she soon wanted food and was allowed to take it in larger quantities than we have generally permitted. Indeed she broke the record and ate far more than patients generally do after these operations. We had this patient remain in the hospital at least six weeks, an unusually long time, in order to have her under observation. No patient could have made a better and more satisfactory recovery from an important operation than she did.

Case II. Miss —, white, age 50, a lady of highly nervous temperament who had been an invalid for many years and had been a victim of the opium habit and insomnia, came under my care in Georgetown University Hospital in 1905. During the past few years she had lost perhaps sixty pounds in weight, had spent much of her time in trying to improve her health, and in 1904 had spent five months in an excellent institution, where she had been almost cured of the desire to take drugs. Although she

was in such good hands, she ate but little food, which appeared, however, to afford the requisite nourishment. For several years she had at times suffered from nausea and vomiting. Two years since, she had proper treatment in this city for the stomach disorder and was at first greatly benefitted, but was still unable to eat abundant food without vomiting or diarrhoea. We found that she not only had insomnia, but each morning had delirium and what her attendant described as periods of unconsciousness. It is impossible to ascertain the nature of these attacks, but in view of the great change in the patient's condition, we think nearly all of these symptoms must have been due to starvation. She had not eaten freely of any solid food for a long time, but we had no very good reason to think she had ulceration of the stomach. There was no history of haematemesis, and she had only "tenderness" and not pain upon pressure upon the epigastrium. She had a large stomach, and the material vomited was highly acid, so we had her stomach washed frequently with copious draughts of warm water in order to overcome the fermentative dyspepsia associated with the dilatation. We finally decided to operate upon this patient with the hope of at least affording her some relief from the vomiting. We were inclined to think her neurotic condition had much to do with her stomach and its behavior, and this fear that our work would result in failure very nearly caused us to refuse to operate upon a patient who was able to exist without it and who would scarcely be able to bear the necessary surgical interference. For several days prior to operation we had her take sterile food and drink, with occasional lavage, until we thought her stomach in every respect ready for the gastroenterostomy. At the last moment it was impossible to secure a satisfactory evacuation of the intestinal canal owing to the persistent vomiting, and we saw her suffer a good deal of inconvenience on account of this disability during the first week after the operation.

Our operative diagnosis was dilatation of the stomach, due to stenosis of the pylorus or other obstruction at this point. The abdomen was opened as in the former case, and the stomach found greatly distended with gas. Its appearance was very unlike the one previously described. There were no enlarged glands nor was the stomach or duodenum adherent to adjoining viscera. We could not even discover evidence of the presence of former ulceration. It was necessary to introduce the tube before the examination was completed, owing to the extreme distension. We are in-

clined to think the obstruction at the pylorus due to angulation rather than to the contraction from ulceration, but we scarcely dare express a positive opinion as to this question. We proceeded with the operation almost precisely as before, but closed the afferent bowel between the button and the stomach, so that it would appear impossible for any of its contents to reach the stomach. When we examined the stomach we found no evidence of ulceration upon its mucous lining. It was, of course, not a very thorough examination, as it was made through the opening after the entero-enterostomy was completed and with the jejunum open and ready for suture. We observed a thick mucous lining which was really in a state of inflammation. Although this patient was in poor condition for operation she soon recovered from the immediate effect of the anaesthesia and vomited only three times after the operation. Her only discomfort appeared to be due to the colicky pains from intestinal efforts to dislodge the fecal matters which were retained for an indefinite time prior to the operation. After the bowels were finally opened all her discomfort passed away and her appetite returned in most lively fashion. Owing to the necessity for rectal feeding and frequent enemas for various purposes, the rectum of this patient was incompetent for further retention of the usual stimulating and purgative treatment customarily used, and this added greatly to her discomfort and might have been a serious complication. We did not hesitate to give castor oil to these patients at the proper time after operation, and when their bowels responded no further purgative has been necessary. The small button in the first case passed in about two weeks, and in the second in nine days and four hours after operation. The cure in the second case has been so striking that we are greatly impressed with the beneficent result obtained by what may justly be styled "stomach drainage." The gain in weight, the improved mental condition and longer and more refreshing sleep, all announce a speedy return to excellent health.*

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*We believe that the first operation performed in this city for nonmalignant ulceration or obstruction of the stomach or duodenum was a "Pyloroplasty" or "Gastroduodenostomy" by Dr. George Tully Vaughan, May 14, 1903. The patient was a man aged 58, who had been a sufferer with dyspepsia, dilatation of the stomach and vomiting for thirty years, and had been in failing health for at least five years. The diagnosis was ulcer of the stomach and pyloric obstruction. The scar of the old ulcer was plainly visible and was seen by all those present. The result of operation was cure and gain in weight of over forty pounds in two months. He is still in excellent health, April, 1905. We believe the cases of gastroenterostomy reported with this paper are the first cases reported in this city of retrocolic gastro-jejunostomy with enteroanastomosis and Matoli obliteration of the afferent bowel at a point between the enteroanastomosis and stomach.

Dr. C. F. Stokes, U. S. Navy, said that as he had the good fortune to see Dr. Stone operate upon both patients whose histories had just been given, he was particularly glad of the opportunity to discuss the paper. We have seen that from 2 to 10 per cent. of the entire population suffer from gastric ulcer at one time or another, according to many obesrvers, and that 50 per cent. of this number recover under medicinal treatment. From 20 to 30 per cent., and sometimes more, are said to die as a result of these lesions. Many, apparently recovered, had relapses later on. Malignant disease follows in many of those who had been pronounced cured. Hare stated that Graham found a history of ulcer in 60 per cent. of 125 cases of carcinoma of the stomach. If we were able to rescue patients destined to hopeless invalidism from a condition with a death rate of at least 20 per cent. by a method of surgical treatment whose death rate was 5 per cent. or better, then it was our duty to give these patients the benefit of that treatment. The majority of practitioners did not sufficiently realize what brilliant results were to be obtained by operative means in these chronic affections of the stomach, commonly known as gastric catarrh.

The principal dangers of the operative procedure, in skilled hands, were pneumonia, shock, leakage, peptic ulcer and vicious circle. Hemorrhage and strangulation of intestine had caused death. It had been shown that pneumonia in these cases was not necessarily due to the anesthetic, but largely to traumatism, by means of which infected emboli were started on their way to the lungs through venous channels which did not pass through the liver. Even when a local anesthetic was used, these lung complications followed. Twenty per cent. of Mayo's deaths were due to leakage. It was hard to see how this complication could follow the excellent technic practiced by Dr. Stone. His inner line of sutures went through all the coats of the stomach and jejunum, and was clearly occlusive and hemostatic. The outer line, a continuous Lembert, effectively supplemented the first.

In neither of these cases did shock play any part. In the first case, upon the completion of the gastroenterostomy, Dr. Stone asked me for an opinion as to the patient's condition and the advisability of undertaking the operative work within the pelvis. I advised in favor of proceeding. The patient's condition was excellent. In the second case the condition of the patient was far from promising at the start, but she actually improved as the operation proceeded and left the table in good shape. These results were by no means accidental. Great pains were taken to avoid undue traumatism and unnecessary exposure of the viscera was very carefully guarded against. Time was a very important element in these cases. Moynihan had completed a gastroenterostomy in 17 minutes. This field of work should be left to the experienced abdominal surgeon, and should be avoided by the

tyro, tempting though it was. Dr. Stokes had seen an experienced surgeon have trouble in locating the ligament of Treitz and the duodeno-jejunal angle. This was best done by pulling the transverse colon upward when the jejunum could be seen passing through the transverse mesocolon on the left side of the spinal column, or by lifting up a loop of intestine and seeing that its mesentery was not twisted; the right layer of the mesentery followed upward and to the left would lead to the origin of the jejunum. This simple measure never failed.

The danger from peptic ulcer increased in direct proportion to the distance from the pylorus at which the stomach contents entered the intestine. This fact should be borne in mind in planning our operative procedures. In anterior gastroenterostomies peptic ulcer had been more common than in the posterior. These ulcers usually appeared within four inches of the opening into the stomach.

The so-called "vicious circle" was not common after operations in nonmalignant cases and was well nigh impossible after the procedure practiced in the essayist's second case. He effected a juncture between the afferent and efferent loops of intestine and occluded the afferent gut between this opening and that of the stomach.

The modified Wölfler-Lücke operation, which was very much like that employed by Dr. Stone, appeared to meet the indications somewhat better than Stone's method. The stomach contents entered the jejunum at a higher point, two to five inches from the angle, reducing the chances of peptic ulcer materially; the duodeno-jejunostomy did away with the chances of kinking in the loop of intestine attached to the stomach; there was little tension anywhere, the intestine falling naturally into place; the duodenum was drained at the lowest point in its S-trap arrangement. It was important to remove an ellipse of the stomach wall at least half an inch in width.

In point of speed the McGraw ligature was between the Murphy button and suturing. Moynihan found an entero-anastomosis unnecessary. He joined the jejunum to the stomach, from two to five inches from the angle, and thus avoided a sag in the afferent loop, which he thought had much to do with regurgitant vomiting.

Dr. Stokes had followed the histories of the two patients operated upon by Dr. Stone with keen interest and congratulated him upon the superb results.

Dr. Carr said that he had been much impressed some time ago by a report of 98 operations for chronic gastric affections with only eight or ten deaths. In the discussion which followed the paper, the benefits of the operation, gastroenterostomy, were made clear, and he determined to try it in cases of ulcer or intractable dyspepsia. Two years ago, shortly after this, a case of gastric ulcer was brought into the hospital, but the patient improved

rapidly and soon left the institution. A year afterward the same patient entered the hospital in a desperate condition. He had not been able to retain food for two or three weeks, and was extremely emaciated. Dr. Carr operated, but the patient did not recover from the shock. Recently he had operated upon another case in which there was free hemorrhage from a gastric ulcer; so much blood was vomited that it was evident that the patient would die unless something radical was done. Urinary examination showed much albumen and many hyaline and granular casts. Gastroenterostomy was performed, but the patient passed no urine thereafter, and died of uremia three days later. Autopsy showed a perfect union of intestine and stomach, and no sign of inflammation or leakage. These two cases were in marked contrast with Dr. Stone's so far as the results were concerned, but Dr. Carr did not think that they counted against the operation, as the first patient was too weak to stand the operation, and the second could not be saved on account of the renal condition.

According to the reports of Moynihan, Mayo and others stricture of the pylorus was a very frequent cause of intense pain and dyspepsia, and also one of the chief causes for the continuance of gastric ulcer. After this was done away with the ulcers usually healed rapidly and the painful symptoms disappeared. This applied also to spasmodic strictures at the pylorus. Operation, being so successful, was indicated in chronic and extremely painful or dangerous conditions, not otherwise curable. One should not hesitate in the presence of serious and intractable dyspepsia, or suspected ulcer, even though the classical symptoms might be absent. Dr. Carr commented upon the difficulty often experienced in finding a gastric ulcer, even one which might be the cause of a fatal hemorrhage. Time should not be wasted in hunting for such ulcers or for a stricture of the pylorus. A tight spasmodic stricture might exist without apparent signs at the operation.

Early operations were done on the anterior surface of the stomach, and the vicious circle was a common occurrence. When, however, the anastomosis was made on the posterior and most dependent part the circle was regularly absent, even when only a simple gastroenterostomy was done. A large opening should be made. The Murphy button was not satisfactory, as its lumen was too small, and the opening subsequently contracted to still smaller size. It was entirely natural that the opening should relieve the colicky pain and hemorrhage. The former was due to the tension on the ulcerated surface when the stomach contracted and attempted to expel its contents in the face of an obstruction. Hemorrhage was facilitated in the same way. The opening did away with the resistance, and the pain disappeared; also, the stomach muscle was enabled to contract, much like the uterus after labor, and hemorrhage was stopped. In conclusion, Dr. Carr

commended the operation performed by Dr. Stone, and commented upon other modes of surgical procedure.

Dr. Claytor said that he had seen Dr. Stone's patient and had talked with her. Were she present her evidence would be eloquently in favor of operation. Dr. Stone had not drawn quite as dark a picture as actually existed. The patient had for eight years vomited her food, and her weight had decreased from 160 to 94 pounds. Since the operation, however, she had been absolutely comfortable. Dr. Claytor had had two patients operated on for ulcer. The first was of the duodenal variety. The patient showed symptoms of collapse on the table, was opened, but no perforation was found. She died shortly afterward. The autopsy disclosed the duodenal ulcer. Dr. Snyder performed the operation. The second case was one of gastric ulcer, and Dr. Carr had already spoken about it. Surgical treatment of these conditions had been very successful, and its introduction marked a distinct advance. As to the future of these cases, the contents of the stomach were acid, and those of the intestine were alkaline; one would naturally suppose that when the stomach contents passed directly into the duodenum a decided mix-up in digestion would occur. Practically, however, no such disturbance took place.

Dr. Vaughan said that all appreciated the importance of the subject, and to get the best results physician and surgeon should work in unison. He spoke particularly with reference to the indications for operation. Some patients got well without operation. He saw a case of ulcer of the stomach ten years ago. The man was perfectly well today, and yet was not operated upon. In the same way, patients with appendicitis recovered, but this fact was no valid argument against operation. As regarded indications, the patients could be divided into three classes: 1. Those having acute perforative ulcers. Here operation must be performed at once, and the mortality was high. 2. Those having acute hemorrhagic ulcers. Here, also, operation must be done quickly, and the mortality was fairly high. 3. Those having symptoms due to chronic ulceration. These cases were the most favorable for operation; Moynihan's mortality was only two per cent. Speaking further of this third class, Dr. Vaughan said that the symptoms were often indefinite, and might comprise only the symptoms of a chronic dyspepsia. Characteristic symptoms were often absent—vomiting, hemorrhage, etc. He believed that a patient with painful dyspepsia and emaciation, who had gone through the hands of the internists for one year without benefit, should consult a surgeon with a view to operation. He mentioned cases of this kind which he had operated upon with complete recovery. One was a woman, operated upon in March, 1903. She was much emaciated, and there was a swelling over the navel, which broke and discharged. A probe was introduced and passed

upward for a distance of six inches. The abscess was due to an ulcer on the anterior wall of the stomach. Adhesions had formed all around it, thus saving the peritoneal cavity from infection. After operation, the woman entirely recovered. Another patient was a man, operated upon two years ago. The usual treatment having failed to produce good results, Dr. Vaughan did a gastroduodenostomy after the method of Finney. Although more tedious than some other operations, he believed that this was preferable to any form of gastroenterostomy, as it was least liable of all methods to be followed by peptic ulcer, and there was no danger of the vicious circle. All these operations were comparatively new, however, so that one could only draw valuable conclusions about them at the present time, and could not decide absolutely as to their merit. The openings in the stomach and intestine should be very large, at least three inches in length, so as as to allow for subsequent contraction.

Dr. J. Ford Thompson said that the hour was so late that he could not discuss the paper as fully as he would like. The subject was of great interest to him because he was well acquainted with the originator of this branch of surgery, Billroth, the father of pylorectomy. Billroth had two assistants, one of whom was the first to perform the operation of gastroenterostomy, and the other improved the operation by using the posterior wall of the stomach. The subject was interesting to Dr. Thompson also because Dr. Stone's patient was a friend of his. For more than 20 years this man had been one of the greatest sufferers that he had ever known. He got so bad that two or three hours after every meal he had to empty the stomach by means of the tube; during the first two hours he enjoyed comparative comfort. He was exceedingly emaciated, and evidently had but a short time to live. He was operated on at Johns Hopkins about two years ago, and since his recovery from the operation he had been as well as ever. The case was remarkable on account of the completeness of the recovery, from the length of time that the disease had existed, and the age of the patient, 70 years. It was difficult to tell exactly what operation was performed, but from a diagram which the man carried with him and proudly showed to all who spoke about his case, it was evidently a simple pylorectomy for a stricture at the pylorus.

Finney's operation was an ideal one in many ways, particularly when the wall was thin; its performance was practically impossible when one had a thickened and fibrous tube to deal with. No one operation would meet all cases; the particular method to be employed must be chosen according to the conditions disclosed by a careful examination of the stomach. Dr. Thompson disapproved strongly of the Murphy button. It was not only harmful at times, but unscientific in every way. Whether it was passed from the body was entirely a matter of chance; not long ago an

autopsy disclosed in the stomach a button which had been there eight years. Besides, the method was not as good or as efficient as the suture operation. There was no need of a secondary anastomosis if a short loop of duodenum was used, with a posterior anastomosis. There was no advantage, and every disadvantage, in using a long loop of jejunum. Hemorrhage from a gastric ulcer should be treated surgically as in the intestinal hemorrhage of typhoid. For a perforating ulcer, the edges should be tucked in and sutures introduced according to the Lembert method.

CASE OF PORENCEPHALUS.*

By G. N. ACKER, A. M., M. D.,

Washington, D. C.

L. P., 11 years old, female, colored. Her mother died in labor, which, however, was normal. No history of the father. No other children. The child was breast fed for three weeks, then fed on cow's milk. None of the diseases of childhood. She has never been able to walk or even stand. Appetite has been good, but bowels constipated.

About February 1, 1905, a bloody discharge was noticed coming from the vulva and a protrusion from the same. This condition has been very painful and the child has been unable to sleep on account of it.

Admitted February 10 to Children's Hospital. She was always in a recumbent posture; thighs and legs flexed. She was poorly nourished. Her chest was very long. Appetite good. Called for milk and meat. Abdomen slightly distended. Both lower and upper extremities much deformed. She never was able to see. Considerable exophthalmos and nystagmus. Sense of hearing poorly developed. She understood when spoken to and would answer questions. Power of speech, however, slight. Power of motion absent except in upper extremities.

On admission to the ward she was so very restless that it was found necessary to put her under the influence of opiates and continue the administration during the rest of her life.

On the 14th, Dr. J. Ford Thompson made an examination and found a gangrenous condition of the urethra, extending almost

* Reported, with specimens, to the Medical Society of the District of Columbia, April 19, 1905.

to the bladder. The gangrenous portion was excised. The temperature ranged from 97.8 to 104° and was irregular. She died on the 15th.

The *post mortem* examination was made by Dr. D. S. Lamb: Body extremely emaciated. Upper border of right ear showed ulceration. Bones of limbs much curved. Brain showed nearly symmetrical porencephalous cysts involving the parietal lobes and parts of temporal and occipital, and extending to the lateral ventricles. Neck and spine not examined. The lungs showed some tubercles and some old adhesions. The heart was atrophied, weighing only 80 grams; much serum in pericardium. Bronchial and mediastinal glands enlarged and tubercular. Dirty liquid in peritoneal cavity, and coils of small intestine adherent together. Mesenteric glands formed a large tubercular mass. Stomach normal. Small intestine showed tubercular ulcers, one of which had perforated, causing peritonitis. Tubercles on peritoneal surface of ulcers. Some small tubercles in liver. Spleen lobulated and tubercular. Pancreas normal. Right kidney normal; small cyst in left. Bladder empty.

Dr. D. S. Lamb said that the reason for the absence of vision had been explained. The question as to muscular action was not so clear, as some of the parietal region and all that related to motion were present. The center of speech was evidently not affected, as the child could speak, though only a few words. Hearing, taste and smell were normal. The child never got over the suckling habit, never learned to chew. He could offer no explanation for this peculiarity.

Dr. J. Ford Thompson said that the case had been turned over to him for surgical treatment. He had never before seen its like. On inspection he found a mass of gangrenous tissue in the region of the vulva. At first it was hard to make out its limitations and cause; he thought that the uterus had been extruded, or something of the kind. Examination of the bladder was negative. There was an abnormality in the course of the urethral passage. Even in the presence of tuberculosis the cause of the gangrene was inexplicable. The child was a miserable specimen in every way. His operation was only palliative, and intended to remove the gangrenous mass.

Dr. Haslup-Lamb said that she saw the patient last August on account of suppression of urine, but made no local examination.

RATIONAL *VERSUS* EMPIRICAL THERAPEUTICS.*

By A. BARNES HOOE, M. D.,

Washington, D. C.

The subject of this paper, "Rational *versus* Empirical Therapeutics," is such a wide one and one on which so much might be said, that it is very difficult to condense it, while at the same time it is not desired to tire you with a lengthy essay. As students of materia medica and therapeutics we were all taught that remedies were divided into two classes, rational and empirical—rational when physiological action and therapeutic result were known, and empirical when only the therapeutic result was known. While it is more than probable that some drugs will always be used empirically, yet with the great advance that has been made in the science of medicine in all its branches within even the past decade, will not the time soon come when the educated physician will resort only to rational therapy? It seems to me that when we shall confine ourselves more closely to rational therapy than the large majority of us do at present, there will be a great decrease in the quantity of even the rational drugs with which thousands of systems are being daily poisoned. It is rapidly becoming a well recognized fact that much more injury is being done than good accomplished by the reckless use of drugs, and as a result we are trying to substitute hygiene and diet for the old-fashioned drug treatment.

In the Great White Plague, of which there is so much talk today, it is well known that no drug will check its course, and as a result, what is being done? The open air treatment, good nutritious diet and cleanliness have taken the place of the nauseous drugs. It will probably be asked What of such drugs as alcohol, strychnia, cod liver oil and the much lauded creosote? In reply to this query it may be said that these exert no direct influence upon the disease; alcohol and strychnia as stimulants, and cod-liver oil as a food, are useful when carefully used, but in my opinion creosote only upsets the digestive apparatus. While I do not believe that any case of pulmonary tuberculosis was ever cured by any system of therapy, yet we all recognize the fact that if we can persuade the victim to believe that it is not medicine (espe-

* Read before the Medical Society of the District of Columbia, April 26, 1905.

cially the many nostrums concerning which the country is flooded with literature,) that is needed, but rest, sunshine and a proper diet, the disease can be arrested. In enteric fever, since the medical profession have come to recognize the fact that no drug has a direct or even an indirect action upon the infection, but that we must meet the conditions as they arise, the percentage of mortality has been greatly reduced. Formerly the antipyretics, and especially quinine, were extensively used and our patients died. Today we resort to the common-sense treatment, use hydrotherapy internally and externally, cold, if the patient can stand it, warm, if not, a diet that will relieve the intestines as far as possible, and in my humble opinion when the profession abandons the milk diet in typhoid there will again be a still greater decrease in the percentage of mortality. It is a well known fact that abdominal surgeons, as a rule, prohibit the use of milk during the first few days after operation, because they know it produces tympanites and constipation, yet many physicians still urge it as a proper diet for typhoids. It goes into the stomach where a portion of the casein becomes a hard, insoluble curd, and in this form passes down into the bowel to act as irritant to the already inflamed and ulcerated organ, blocking it up, at first causing constipation, then we have fermentation and tympanites to be followed by diarrhoea and probably hemorrhage and perforation. There is scarcely a day in the year that our offices are not flooded with literature or detail-men lauding some nostrum as a specific for some certain malady ; the newspapers are filled with such advertisements, and even the medical journals are teeming with them.

I ask my medical confréres if there is any excuse for the educated physician of today resorting to the use of such nostrums ! Are we not able to formulate our own prescriptions and write them according to physiological laws? Only a few days ago a number of medical gentlemen of this city were talking of their experience with the use of a certain nostrum, and all of them seemed to think it the wonder of the age. One of them seemed to think particularly favorably of it because the manufacturers were so liberal—they would send samples of it to any one who would write for it, whether layman or physician, and furnish literature to tell of the miracles that had been accomplished by its use. When the aforesaid gentlemen were asked the composition of this wonder, not one of them knew it. The country is becoming

filled up with "Ists and Paths," with prefixes too numerous to mention, who are making rapid inroads upon the innocent and unsuspecting public; and when a layman is asked how he happened to place himself under the care of such a party what is the reply? It is usually this, "Well I took medicine until I was tired and I thought I would try their methods." The best and most reliable drug manufacturers in the country tell us, and I believe justly so, that we are to blame for the quantity of patented and secret nostrums in daily use, and that did they not send around detail-men to keep fresh in our mind their preparations the so-called quack firms would soon run them out of business. The medical journals are published to be sold to the medical fraternity, and if the profession will stand together and demand that our journals publish only decent medical matter they will be compelled to do so, but until we do take this course the publishers will continue to become rich on the money paid for the quack advertisements and the quack advertisers rich by using us as the go-between to float their useless and dangerous nostrums.

It is more than strange that the American Medical Association has not taken up this matter long ago, but let us hope that they soon will, at least as regards the journal that is supposed to be the organ of the Association. I would like to see established here in this city an apothecary shop that would only keep in stock the drugs recognized as official, and I believe it would receive the support of the medical profession. Such a store is now being conducted in Baltimore, and is receiving the hearty support of the medical profession of that city. Only a short time ago a druggist said to me that he would like very much to be allowed to run a drug store, but the physicans of the city would not allow it. When asked to explain himself, his reply was, "A large percentage of the prescriptions that come to me contain a proprietary medicine, and unless I fill such prescriptions I would have to go out of the business." Now, gentlemen, who is to blame for this state of affairs?

Dr. Acker, being asked to open the discussion, commended Dr. Hooe's stand as being entirely correct. Physicians should prescribe only remedies of recognized value, and preferably those which were official. Furthermore, they should not prescribe drugs unless they were clearly indicated. Too many prescriptions were written to combat symptoms before a clear diagnosis had been

established. Sometimes the practitioner had to resort to symptomatic treatment, but under these circumstances the prescriptions should be as simple as possible. The number of physicians who practiced polypharmacy today was surprising. Recently he saw two prescriptions, written by one of our leading practitioners, each of which contained five ingredients. The combination of remedies was preposterous. That the physician should not prescribe secret or proprietary remedies of the composition of which he knows nothing is a proposition generally accepted by the profession; yet he not infrequently met physicians in consultation who prescribe such remedies.

Dr. C. Norman Howard said that a distinction should be drawn between patented and proprietary medicines. Since 1880 patents had very rarely been issued for medical compounds. A large number of the remedies which were called "patented" were really only trade-marked. The remedies advertised in the lay papers, for instance, were not patented. A patent must give sufficient information in regard to its subject that others skilled in the art can produce it. A trade-mark did not have to reveal the ingredients of the remedy. Thus it gave the owners a proprietary right to a name which covered a product the formula of which was unknown. On the other hand, some well-known medicines had been patented, such as salol, phenacetin and antipyrin. In these, however, the patent covered the process of manufacture of one drug, and not the composition of a preparation containing several distinct remedies. It was due to the public that each package of medicine should state the ingredients of the mixture and the quantity of each. It was of interest to know that the Agricultural Department had been making analyses of some of the proprietary remedies.

Dr. Motter said that reference had been made to the prescribing of such remedies only as were to be found in the pharmacopoeia Since he was a delegate to the Convention in 1900 for the revision of the U. S. Pharmacopoeia, he had been in close touch with the questions dealing with the forthcoming revision. It was interesting to know that a number of new preparations would be introduced which would reflect the great pressure brought upon the profession to prescribe patented and proprietary remedies. There would be a new Compound Syrup of Hypophosphites, the old one, "cum Ferro," being dropped. The new preparation would contain iron and eight other ingredients, an evident instance of polypharmacy, a response to the popular demand rather than a testimony to therapeutic efficiency.

Patented and proprietary remedies covered by "product" patents were so protected in most instances that eventually the right to the trade-mark would expire with the patent. For instance, this year the maker's right to the name "Trional" would expire, and next year this would be true of "Sulphonal." A number of such

remedies were to be introduced into the pharmacopoeia under their chemical names, but he doubted whether many practitioners would remember to call them by their long, new names. In conclusion, he stated that the American Medical Association had taken up the question as to the content and ethical status of patent and proprietary medicines, and had organized a council to study these remedies and report upon them. He commented upon a criticism of this action of the Association, contained in the *National Druggist* for April.

Dr. Kober commended the paper; it was very timely. A few years ago he made an investigation as to the number of proprietary medicines then protected by trade-mark, and to his surprise found that it was over 5,000, and the number was increasing at the rate of about 250 per year. Less than 1,000 preparations had been patented, and of the two classes this was the least harmful, as the composition was known and could be seen at the Patent Office, only the process of manufacture being protected by letters patent. About proprietary medicines, however, practically nothing is known even to the Patent Office, and hence trade-marks were preferred by the owners. He had always felt that the Government was engaged in a small business to protect these secret remedies, and it was equally small on the part of the medical profession to order or use them. If the support of the profession were withdrawn, most, if not all, these preparations would be withdrawn from the market; hence the profession was in one sense to blame for their existence. The profession should cease to countenance the use of all compounds unless the exact ingredients were disclosed.

Dr. R. S. Lamb spoke very strongly against prescribing these preparations. The patient was entitled to his physician's best knowledge, and he was not getting his due if the physician prescribed for him a preparation of the composition of which he was ignorant, or if he depended upon a drug firm for the composing of his prescriptions. If Dr. Lamb himself were a patient and a physician ordered for him a patented or proprietary medicine, and he found it out, he would certainly never consult the same physician again, and Dr. Lamb knew of many others who felt the same way. Hence, from a mere financial standpoint he believed that the physician who countenanced these remedies would suffer in the end.

Dr. E. L. Morgan said that the profession was to blame for the existence and extensive use of proprietary remedies. It would be hard to get at the facts as to the amount of stock held by physicians of the highest professional standing. Too often they were the greatest sinners in violating and not living up to medical ethics. Some years ago a doctor of reputation *and supposed good standing* prepared and presented to the medical public a paper on a proprietary remedy, said or thought by some to possess a little

value in the treatment of disease. He was accused of being paid for this article. No doubt, if a rival firm had paid him well, he would have prepared a similar paper on any remedy possessing the slightest merit. He seemed at that time to have been too busy to refute charges made reflecting on his professional honor. The silent intimation seemed to be that *he needed the money*. A very sad reflection!

TWO CASES OF GOITRE WITH OPERATIONS.*

By GEO. TULLY VAUGHAN, M. D., and ARTHUR A. SNYDER, M. D.,

Washington, D. C.

Dr. Vaughan said that his patient was 74 years of age. Had a large goitre of right lobe of thyroid, which had been growing 49 years. It gave little trouble for 39 years, and then it began to cause pain, and the lower portion broke down and discharged blood and pus for two years. The hemorrhage was so severe that the woman feared that she would bleed to death. The bleeding ceased, however, and the growth gave no further trouble until a few months before operation, when great pain again set in. Dr. Rhett Stuart referred the patient to him, and he operated upon the woman about three weeks ago. He described the operation and exhibited the growth, which was of the fibro-cystic variety. The patient recovered without trouble, and was now entirely well. She retained one-half of the thyroid.

Dr. Snyder showed a specimen of the cystic variety, removed a year ago from a negress 25 years old. She had had three children, and after the birth of the second child she noticed a swelling on the right side of the neck. She completely recovered.

Dr. A. F. A. King inquired as to the kind of anesthetic used in the operations.

Dr. Vaughan replied that he had used ether.

Dr. James F. Mitchell said that he, too, was interested in the kind of anesthetic used. He presented a third specimen of goitre, from a woman over 60 years old. She had had it since she was a girl. Of late it had increased rapidly in size, and had caused much dyspnoea; it also interfered with singing and made her voice hoarse. He removed the growth last Thursday, under cocaine, using Schleich's solution No. 2. He described the operation. It was well borne; there was no reaction, and the woman left the

*Reported to the Medical Society of the District of Columbia, April 26, 1905.

hospital today. The type was that of a colloid adenoma, with a tendency to cyst formation. The left lobe of the gland was normal. The action of the cocaine was entirely satisfactory. He had seen three of these patients die on the table under ether anesthesia.

Dr. Vaughan said that while Kocher preferred cocaine anesthesia, many other surgeons preferred to employ a general anesthetic. There was no question but that the latter was dangerous in exophthalmic goitre, but this was not true of the ordinary variety. Cocaine acted well in patients who had plenty of "nerve." He had used Schleich's method, having learned it directly from Schleich himself. He believed that many patients who could stand an operation under cocaine could stand an operation without any anesthetic whatever. One advantage of cocaine in operating for goitre was that it enabled the operator to avoid injuring the recurrent laryngeal nerve. This was accomplished by keeping the patient phonating all the time.

CASE OF UNUSUALLY LARGE AORTIC ANEURYSM.*

By WM. H. HOUGH, M. D.,

Interne, Government Hospital for the Insane.

The case is one of aneurysm of the ascending part of the arch of the aorta, and is of interest chiefly on account of its large size and the presence of a venous collateral circulation. It occupied the greater part of the right half of the chest, eroded the third, fourth and fifth ribs for a distance of 12 cm., beginning $6\frac{3}{4}$ cm. from the edge of the sternum, and formed an extra-thoracic tumor which extended from the midsternal line to the posterior axillary line, and from the clavicle to the seventh rib. The aortic arch was much dilated and atheromatous. Through the right wall of the arch was an oval opening 8 cm. in its long diameter, its lower margin being 6 cm. above the aortic valve. There was little or no cardiac hypertrophy, and the aortic valves were competent. The aneurysmal sac contained, after the fluid blood had drained off, 2,200 grams of clot. There was an area of atrophy of the sac wall 6 cm. in diameter at the posterior superior portion of the intrathoracic sac near the median line. This had permitted oozing

* Presented with specimen to the Medical Society of the District of Columbia, April 26, 1905. A full report of the case, with mental symptoms added, will be published in the Johns Hopkins Hospital Bulletin.

of blood into the lower part of the upper lobe of the right lung, and the formation at this point of a clot about the size of a lemon.

The veins involved in the collateral circulation were in the order of their size, the right superficial epigastric, a large branch from the left superficial epigastric joining it near the umbilicus, several lateral thoracic veins, the right jugular and a network of superficial veins over the tumor and over the superior and anterior surfaces of the right shoulder. The flow was from above downward. These veins were markedly dilated and tortuous. This collateral circulation was thought to be due to obstruction to the flow of blood in the right innominate vein and the superior vena cava.

Dr. Blackburn said: I have been requested by Dr. Hough to demonstrate his specimen, though I have little to add to the description already given. The aneurism is the largest of the kind I have met with in my autopsies, though I saw one in the University Hospital, Philadelphia, with larger external protrusion. Such cases are not common, this being the fourth case of extrathoracic false aneurism examined out of at least thirty aortic aneurisms on my post mortem records.

In this case, as in others of the kind, the danger of rupture externally seemed imminent, but such aneurisms rarely rupture through the integuments; the skin is able to withstand the pressure, and, as a rule, the pressure is in inverse ratio to the size of the aneurism. They do rupture, however, but it may be simply oozing, as in this case, or the patient may die of exhaustion before rupture takes place.

A word about the preservation of the specimen for the museum. The cavities were emptied, the specimen washed and packed with absorbent cotton. Formalin was used as a preservative, but, notwithstanding this, some shrinkage has taken place. This accounts for the discrepancy in the size of the specimen and the cast exhibited.

The specimen of extrathoracic aneurism I exhibit was somewhat similar in character and course to that of Dr. Hough. In this case the aneurism began as a sacculation of the transverse portion of the arch about an inch above the valves, and on the anterior aspect of the vessel. From this point the sac extended in every direction, but especially downward and forward over the heart, pushing this organ downward and to the right. The sac had formed extensive adhesions to the chest wall, and had caused absorption of the anterior portions of the 3d, 4th and 5th ribs, and dislocation of the costochondral articulation of the 4th and 5th ribs. A large opening had thus been made in the chest wall, through which the true aneurism communicated with a large false sack within the muscles of the chest. The edges of the

opening were rounded, and not a trace of the true aneurism wall extended beyond it.

The sac of the aneurism was about as large as the heart itself; the false sac was considerably larger. The inner surfaces of both cavities were coated with shreddy, firm clots, but most of the contained blood was fluid. The whole arch was greatly dilated and the aneurismal opening from the vessel seemed to occupy almost the whole anterior aspect of the arch. The remainder of the aorta was atheromatous, but about normal in caliber. The heart was about normal in size, valves slightly thickened, pericardial sac obliterated by chronic adhesions. Actual rupture had not occurred, but slight oozing had been sufficient to tinge an accumulation of serous fluid in the left pleural cavity.

The second specimen I exhibit is a sacculated aneurism of the descending portion of the arch posteriorly, with adhesions to and erosion of the bodies of the second, third and fourth dorsal vertebrae. The wall of the sac had entirely disappeared over the eroded area, and the interior was filled with an extremely dense laminated clot. The portion of the clot facing the lumen of the vessel was comparatively smooth and had offered little obstruction to the blood current. The whole arch was dilated, and on the anterior aspect, opposite the aneurism, the wall had become very much thinned over a circular area about 1½ inches in diameter, and here hemorrhage had taken place into the mediastinal tissue and thence into the right pleural cavity. Two distinct syncopal attacks probably were coincident with these primary and secondary ruptures. The heart was not enlarged and the valves were but slightly thickened.

The history and the associated post mortem conditions in the first of these cases and the history in the latter case show that syphilitic arteritis was the probable cause. In the first case the patient was a man aged 58 years, the second a man 46 years of age.

We have in the three cases exhibited illustrations of the remarkable tendency of aneurism of different portions of the arch to extend in definite directions, so that we may decide with some certainty the course and the effects on adjacent structures, and to some extent even predict the termination of such conditions.

Dr. Vaughan congratulated Dr. Hough upon his presentation of the case. To the surgeon the interesting point was whether the patient might have been cured, especially if he had been treated when the aneurism first appeared. Very likely, however, the malady was not recognized until after it was too late for surgical interference. The preferable operations were ligation of the subclavian and common carotid arteries on that side or the passage of wire and the use of the electric current. Several cures had been reported by each method, particularly the first, the beneficial effects lasting for several years.

THE USES AND ABUSES OF PELVIC MASSAGE.*

By JOSEPH TABER JOHNSON, A. M., M. D., Ph. D.,

Washington, D. C.

There have always been fads and fanatics in the practice of medicine and I presume there always will be. Men and sects have arisen since time immemorial and pretended to cure all manner of diseases.

In most of the pretensions put forward one idea has dominated until some other idea made more plausible to the gullible public has displaced previous pretensions by more emphatic promises of cure.

Empiricism, as the generations grow more intelligent, has generally given way to scientific medicine, and the civilized world is becoming more and more insistant upon a rational and effective therapeutics.

There still exist, however, many theories for the eradication of the ills to which human flesh is heir, some of which are honestly, some of which are dishonestly, practiced.

It is not likely that this state of things will ever be entirely changed until frail human nature is purged of its commercialism and all men come to believe that in the long run honesty is the best policy.

There can be no doubt that some few men have been led to honestly embrace a single dogma and to practice it conscientiously in these latter days, and there is also no doubt that the one principle of treatment may have produced excellent results when applied to that one class of ailments to which it was applicable, but the temptation has been, where faith was aroused and confidence secured, to promise more benefit in a variety of directions than could be realized. Some previously honest men have allowed their commercial tendency to lead them into dishonestly promising more than they could perform.

Illustrations of this statement will probably occur to the minds of those present, and only one or two need be mentioned, familiar to everyone.

For example, the good results of water, cold and hot, inside and outside of the human body are recognized and acknowledged by

*Read before the Medical Society of the District of Columbia, May 3, 1905.

us all, in appropriate cases, and when employed in association with other remedies it is productive of the best results. But when a cure is promised by individuals or water-cure institutions for all or inappropriate cases, the spirit of commercialism has outstripped the spirit of honesty.

The same is true of electricity, also of diet, of exercise or exercises, especially the exercise of faith, that beautiful and saintly virtue when exercised in things spiritual, but when blindly, in the belief of things too material and commercial, is prostituted to the extent of leading their innocent victims into the jaws of death and the gates of that bourne from which no traveler returns.

General and special massage has been in more or less use for the relief of the pains and sprains of the human race since the time when the Great Physician cured disease by the laying on of hands.

That it benefits many abnormal conditions, and cures some, we all admit; but that it cures or even benefits all abnormal conditions, all honest men will deny. That it does much harm when applied in inappropriate cases is an accepted fact by intelligent and honest men.

All the various methods of applying massage have the same objects in view, whether it be manual, vibratory or electrical. The same may be said when it is applied generally, specially or locally. In all cases this agency for good, if only good results are to be expected, should be employed only after a careful and expert diagnosis has been made of the exact nature and stage of the disease or injury to be so treated.

To massage an acute sprain or fracture is just as much an error as to massage an acute inflammation or abscess, while great good is accomplished in the improvement of the circulation, in promoting absorption, in soothing pain, in allaying nervous irritation and relieving insomnia in the chronic stages of these and many other properly diagnosed conditions.

Harm has been done by too early, too constant and too frequently-repeated massage, by too zealous, ignorant and irresponsible persons calling themselves masseurs, and thus imposing a spurious article upon a too credulous and confiding public.

Institutions as well as individuals devoting their energies to this one method of treatment, or occasionally combining baths or electricity with it, are likely to do much harm unless they com-

bine the rare virtue of the expert diagnostician with their manipulative skill in the use of these methods of treatment.

The question of "pelvic massage" was brought prominently before the public by Major Thuré Brandt, of Stockholm, an officer in the Swedish army about 25 years ago. Major Brandt was an instructor in health gymnastics in that city, and from the preservation of the health of the Swedish officers, he gradually developed a system of Swedish movements and hygienic gymnastics for the cure of disease, first, among the officers suffering from torpid liver, constipation and hemorrhoids, and finally extending his practice to the female sex.

To abdominal massage and his system of hygienic gymnastics for the above mentioned ailments in both sexes he also added and developed a system of pelvic massage for the cure of many of the diseases and misplacements of the female pelvic organs.

So great was his success in the treatment of these conditions that his methods attracted much attention, and he had many pupils from different parts of Scandinavia and Germany and some from France.

He, and later on his followers, claimed to be able to cure permanently many chronic pelvic inflammations, especially those accompanied by exudates and adhesions forcing or holding the uterus and its appendages in malpositions, by abdominal massage with one hand, and gradually stretching these adhesions and manipulating these exudates with one or two fingers of the other hand, in the vagina. The two hands working together, sometimes in unison and sometimes opposing each other, it was claimed would gradually and painlessly, after many seances of from ten minutes to half an hour each, succeed in attenuating adhesions down to the disappearing point ; in causing the absorption of effusions of greater or less density and finally liberating the uterus from its abnormal environment, and the tubes and ovaries from their beds of adhesions.

The attractiveness of these claims brought many timid women with pelvic diseases to those who practiced this method of treatment, and much was made of the successes which followed. It was called the bloodless method, and was placed directly and prominently in contrast with the technique and occasional bad results of pelvic surgery.

The point was constantly made that a surgical cure was fre-

quently at the sacrifice of important organs, and even when the patient's life was threatened by the presence of abscesses or tumors, and saved by their successful removal, many painful or disagreeable sequelae, which sometimes followed, were finally removed by pelvic massage.

In the translator's preface of Dr. Zeigenspect's book on "Pelvic Massage," the following is his opening sentence:

"The medical world of today becomes more and more fully convinced of the fact that pelvic massage is to be classed among the most important therapeutic measures in gynecology, especially on account of the disappointment so frequently met with in the operative proceedings."

Zeigenspect says, on page 12 of his book, after referring to the failure of many of the chieftains in medical science to recommend Brandt's treatment, that many of the lesser lights are using it with great success, and he constantly recommends it to his classes in the university. He says that, after using it in over 1,000 cases, with the greatest success, his conscience would revolt were he to fail to recommend pelvic massage, in even a single instance, in which he had employed it in the past, as no other method cured so quickly and none had so few relapses.

He says of local treatment that "it consists with few exceptions in massage and stretching." He leaves out many of Brandt's hygienic gymnastics, and even changes the position of the patient and the manipulator, from that illustrated in Brandt's book. "Massage serves to promote absorption of swellings and effusions and to relieve painful and swollen organs. Stretching is used in inflammatory processes where shrinking has set in, to lessen the adhesions which have formed in the pelvic connective tissue, and to separate organs which have become adherent to each other by peritonitic exudations." "With the fingers of one hand in the vagina we stretch the fixating cord, while with the other hand the band is massaged from the abdominal wall."

Gilliam, on page 358 of his text book on gynecology, in discussing the treatment best calculated to promote the absorption of exudates and restore the pelvic circulation to its normal equilibrium, recommends "pelvic massage as of undoubted efficiency in promoting absorption and liberating adhesions;" but he says "before this is resorted to, the absence of pus in the pelvis should be accurately determined lest serious damage ensue."

Garrigues says, on page 199 of his "Gynecology," "certain manipulations inside of the pelvis and through the abdominal walls constitute a valuable mode of treatment in many diseases of women, especially chronic metritis, cellulitis, peritonitic exudations, hematoma and oophoritis," etc., etc.

"In this way exudations, infiltrations, hypertrophies and adhesions are made to disappear, weak ligaments and muscles strengthened, and displaced organs brought back and kept in their normal positions."

He thinks the procedures are so painful that there "is no danger of causing sexual excitement." He inserts one or two fingers into the vagina and keeps them pressed against the part to be massaged, while with the other hand he seizes it through the abdominal walls and rubs and squeezes it—for ten minutes three times a week.

He recommends "against its use if there is blood or pus in the tubes." Again, on page 473, while discussing the treatment of bound-down retro-displacements, after condemning Schultz's method of forcibly breaking up adhesions, usually under the influence of an anesthetic, he says of massage (Brandt's method): "Not less efficacious and safer than Shultz's is Brandt's method, that obtains similar results by means of manipulations directed through the abdominal wall and the vagina. By this method the adhesions are stretched gradually and made to be absorbed by increase in vital processes. If, however, there is a pyosalpinx or other purulent collection in the pelvis the pus may be pressed into the peritoneal cavity and cause acute inflammation that may end fatally."

Penrose says "the results of pelvic massage in the treatment of chronic pelvic inflammation have not been encouraging."

Reed, on page 291, says: "It goes without saying that this method of treatment," referring to pelvic massage, "is contra-indicated in the presence of infectious conditions of the uterine adnexia and the pelvic lymphatics. The extreme difficulty of detecting these conditions renders massage a dangerous remedy."

Again, on page 538, after a warning against its uses in infections of pus or acute inflammatory cases, and after describing its technique, he says: "In a favorable case persistent (pelvic) massage will restore a considerable range of mobility to the adherent uterus and adnexa so that it even may be possible for the patient

to wear a soft rubber pessary with comfort. Circumscribed exudates are softened and absorbed and become insensitive, menstruation becomes regular and less painful and the patient's general health becomes sensibly improved."

Baldy is "much opposed to its use on account of danger of rupture of fluid collections in the pelvis." He says, however, that "under careful and very gentle movements it can readily be seen why in this way pelvic masses disappear or become small." But "the treatment is altogether too dangerous for the general practitioner to employ, and its use will always be confined to the hands of a few possessing expert diagnostic and manipulative skill."

Coe devotes thirteen pages of his book on clinical gynecology (184 to 197) to a description of the uses and abuses of pelvic massage. He highly approves of its use in the chronic stages of pelvic exudations, such as Brandt and Ziegenspect described as "parametritis and parametritis chronica," of all the class of pelvic swellings and adhesions which bind and mat the pelvic organs together; but opposes its employment in all acute inflammations, infections and in pus collections.

Where the masseur possesses sufficient expert skill to make the necessary differential diagnosis, he even goes so far as to recommend such pressing and stroking manipulations as will empty sterile fluid collections of the Fallopian tubes into the uterus.

Coe says that the massage when well carried out is really one of the best things at our command for the treatment of uterine displacements caused by adhesions.

Especially is this true of bound-down retroversions and retroflections. He thinks "pelvic massage useful in amenorrhoea and dysmenorrhoea, where these conditions are dependent on faulty circulation or upon obstructed venous circulation caused by displacements or effusions, or exudations pressing upon the pelvic vascular supply."

E. C. Dudley devotes an entire chapter to pelvic massage in his recent work on "Practical Gynecology," introducing many of Brandt's descriptions and illustrations. He says that "pelvic massage for chronic inflammation around the uterus, as developed by Thure Brandt, is one of the most effective of nonoperative local measures, and is indicated for the removal of inflammatory exudates, the stretching and breaking up of adhesions, the restora-

tion of function to contracted or overstretched ligaments and reposition of the displaced organs." Dudley recommends "women masseuses," as he says, for obvious reasons.

He also, as all the other authors I have quoted, speaks of massage only as one of the methods of nonoperative treatment, and, while he thinks very highly of it, in appropriate cases, all recommend surgical procedures for the relief of acute infectious, malignant, ectopic and pus cases.

These are the chief contraindications to the use of pelvic massage.

I will only refer to the views of one more author, and have only drawn attention to the above to reïnforce my own experience.

I knew there was considerable literature on this subject among the Swedes and Germans, but had no idea when I began the study of the literature of pelvic massage that our American gynecological text books had so much to say of it, and that nearly all highly commended its employment in the class of cases very generally mentioned as "appropriate."

Barton Cooke Hirst does not mention the subject in the index of his text-book on gynecology, but he does say, when speaking of chronic retroversion, "a course of medical gymnastics and massage should be recommended."

Montgomery's reasoning is the same as the others. Under the head of Local Therapeutics in Gynecology, he says, page 109, "the beneficial results of massage in local inflammation of joints and superficial portions of the body justified the hope that it might be practiced with advantage in the conditions of acute and chronic exudations within the pelvis." He says further on, after describing the Brandt system, "this procedure will be indicated in all subacute and chronic inflammations of the pelvic organs unassociated with pus formations, in displacement when fixed by inflammatory adhesions, in subinvolution and hypertrophy of the uterus, from chronic interstitial inflammation, and in relaxation of the pelvic floor from increased weight of pelvic organs."

In describing the treatment of uterine displacement, he says, among other things, "with purulent inflammation of pus collections in the tube excluded, the absorption and loosening of the adhesions of the ovary, tube and uterus can be effected by pelvic massage."

My own experience in the use of this method has been mostly in the nonoperative cases of uterine displacements and old pelvic

exudations with adhesions, and by nonoperative is meant those cases presenting uncomfortable and disagreeable symptoms and yet not sufficiently distressing to suggest surgical operation, especially such as would require opening the abdomen. So far as my experience has gone the mere displacements themselves have given very little trouble, the natural position of the uterus in the pelvis being one of entire mobility, the symptoms complained of being caused apparently by coexisting complications.

These complicating conditions are generally caused by the effusions, exudations, adhesions and chronic inflammations mentioned by the authors above quoted. When yielding to the importunities of patients, fearing the use or the effect of the knife, to try some less alarming and radical treatment, I at first suggested pelvic massage, partly to gain time and in some cases to demonstrate the uselessness of any but surgical methods. After a few weeks of treatment the surprise of the physician was greater than that of the patient when he found that the complicating conditions had disappeared, and with them went the symptoms also. All cases cannot be thus safely treated.

As above frequently stated, acute inflammations, infections, the presence of pus, malignancy and ectopic pregnancy, contraindicate pelvic massage; but we do have many distressing retrodisplacements, unaccompanied by any of the abovementioned associated or complicating contraindications, but complicated still, by those other associated conditions which are not included among the contraindications.

In those cases where one possesses the expert skill to differentiate the safe from the unsafe conditions, pelvic massage can be relied upon to restore abnormal to normal states when intelligently and honestly carried out by one fully understanding its details.

This treatment of uterine displacements has seemed especially attractive on account of our failure to definitely agree upon any surgical procedure which has found anything like universal acceptance.

Our surgical brethren actually rival Heinz, with his fifty-seven varieties of pickles, as more than that number of operations and modifications of operations have been proposed and practiced for the surgical relief of retrodisplacements of the uterus. This fact

is evidence in itself that none of them are satisfactory to surgeons generally.

In December last I read a paper before the Southern Surgical and Gynecological Society on Ventrosuspension, and tried to convince its Fellows, that this operation was applicable in a wider range of cases than any other, notwithstanding several drawbacks, such as its possible interference with pregnancy and labor, ventral hernia in a few more, and failing to succeed in about fifteen per cent. of still other cases.

In the prolonged discussion nearly every one had a little fault to find with ventrosuspension and finally closed his remarks by recommending some modification which he thought an improvement. Hardly any two agreed upon any particular operation.

I thought then, and still think, that this procedure has more to commend it and less to discredit it than any other of the fifty-seven varieties, when any surgical operation is required. Every surgeon knows that operations have to be differently performed in different cases. Women differ, their conditions differ, and their operations cannot all be the same. One has to fit the punishment to the crime, as they say in Micardo.

In the *Journal of the American Medical Association* for May 11, is a very thoughtful article by Dr. Lucy White, of Chicago, in which she attempts to prove that surgery is a dismal failure when attempted for the relief of uterine displacements. The paper fairly bristles with statistics. After a general attack on pelvic surgery for this purpose, she asks three very pointed questions. 1st. Are these operations necessary? 2d. Are they safe surgical procedures? 3d. Have they proven successful in a sufficiently large percentage of cases to warrant their continuance?

She concludes her paper as follows: "From the statistics cited and the testimony presented by the numerous witnesses quoted in my paper, as well as from the results of my own clinical observations, I feel warranted in answering the questions asked, in the negative. Surgical procedures in retro-directions *are* unnecessary, they are unsafe, and have not proven successful in a sufficiently large percentage of cases to warrant their continuance."

Dr. Helen Hughes, of Minnesota, in the February 25th number of the *New York Medical Journal*, writes a paper on this subject, the first paragraph of which is as follows: "The importance of this disorder among the diseases of women is evidenced by the

number of methods which have been exploited for its cure, none of which has been so satisfactory as to close the subject."

If all this be so, we may turn in the future to pelvic massage, which Zeigenspect says he has tried in over 1,000 cases, and that "no method cures so quickly and that none has so few relapses."

Drs. Vineburg and Boldt, of New York, have written papers praising in high terms the use of massage in the treatment of many of the pelvic diseases of women and especially of uterine displacements.

Dr. Sofie Nordhoff-Jung has also contributed a paper on this subject to this Society.

Having said this much of the history and proper uses of pelvic massage by a number of authors and practitioners your attention is directed briefly, in conclusion, to some of the abuses.

This method is abused, or the persons upon whom it is used are abused, when employed for the relief of the acute inflammations or infections. The gonorrhoeal and septic pus tubes, and specific as well as puerperal infections of the female genital organs should not be massaged. Neither should cases of malignancy.

We hear occasionally of an abscess or an extrauterine pregnancy being ruptured with fatal or very damaging results, by the unskilful pelvic massagist.

One of the chief objections urged against pelvic massage by gynecological surgeons is, that the masseur only looks at the vaginal or extraabdominal side of the shield.

Surgeons occasionally come in contact with adhesions and exudations in their abdominal operations which they believe, and I think in many cases justly believe, impossible of any other than surgical relief. Adhesions which cannot even be broken safely by their fingers, in immediate contact, and which require to be severed with the knife or scissors, and sometimes ligated to prevent hemorrhage.

Some masseurs who do not operate, may honestly think, that because they can dissipate some adhesions and some exudations in the pelvis by massage, they can dissipate them all. But for those pelvic massagists who have seen abdominal operations, to promise a cure of all the cases above referred to by massage is the rankest kind of abuse as well as the most diabolical kind of commercialism.

For a pelvic massagist to promise a cure within a specified time, and to portray the horrors and uncertainties of the surgeon's knife to a timid patient in order to gain a client and fat fees, is trifling with human life, and should be condemned by all good men and women as an abuse. But the greatest of all abuses, and the one which condemns the entire practice in the minds of some, is the shameful and disgraceful prostitution of a method of treatment, which, according to the best of evidence, has much of good in it when properly used, to that kind of commercialism which should be denounced as unprofessional and immoral.

The charge is openly made by opponents of this method that abortions are "accidentally" produced in its name; but what is worse even than that, innocent young women, some of them of the best families, are "accidentally" taught masturbation, and their whole moral nature thus undermined by this most detestable kind of dishonest and unprofessional commercialism.

Some of you may remember that a prominent gynecologist of a neighboring city once denounced pelvic massage as "scientific masturbation." Another distinguished gynecologist, this time in Germany, refused to endorse a method of treatment which, in the hands of the unprincipled moneymaking commercialist in the profession, might degenerate into the abominable and disgusting practice of men masturbating women."

But while all this is *possible*, the same as any other abomination is possible, to the moral degenerate and the unprofessional thief or swindler or commercial apostate in our profession, it is no more possible than many other hardly less dishonorable practices which are also, and, let us hope, with as little truth and thoughtfulness, charged against the most ancient and honorable of professions.

It strikes me that there is no more danger that these fears will be generally realized in regard to the practice of pelvic massage than they will be in the general practice of medicine, obstetrics or gynecology.

A man or woman who honestly acquires the degree of Doctor of Medicine would have to sink very low before, with malice aforethought, he would substitute such a sordid commercialism for common professional honesty.

We have an occasional black sheep in our white flock, who, for money, will commit a criminal abortion or perform an unneces-

sary surgical operation, thus equally betraying the trust of his *alma mater* and a confiding public.

If we were controlled by our fears that the great trust reposed in apparently honest men would be abused, there would be no progress. Even in the Church there is an occasional black sheep.

Should we take council of our fears that some one may make an improper use of the knowledge imparted in our medical colleges, notwithstanding the sacredness of the hippocratic oath and the honorable conduct taught, we would be compelled to lock up the morphine, strychnine and arsenic lest too large doses be given, and to dull the edges of our scalpels lest they cut too deeply.

Much better would it be that the guilty should be so severely punished that others would be deterred from transgressing the unwritten as well as the written law of professional honor and decency.

From all I have read and from an increasing personal experience, I believe there is much of good in pelvic massage when properly used in properly-diagnosed cases. Quite a bright future may yet open up for its expert use in the debatable and yet unconquered field of uterine displacements, but, like all other good things, it is liable to abuse by the unfortunately inexpert or commercially dishonest practitioner.

Dr. Sophie A. Nordhoff-Jung referred to a paper upon this subject that she read before the Society ten years ago. It was not then well received, the principal reason being that the method was devised by a Major in the Army and not by a scientific man. She spoke of the ever-increasing field of usefulness for pelvic massage, particularly preparatory to operation, and afterward to break up adhesions. The French School had established its scientific basis by experimental methods. Relief generally followed the procedure, and a cure not infrequently. Miculicz was an enthusiastic follower of this method. He claimed to cure 50 per cent. of such cases in Breslau. Dr. Nordhoff-Jung related cases in France of pelvic tumors, with adhesions. The latter were loosened prior to operation by pelvic massage, thus doing away with capillary hemorrhage. Recovery was therefore more rapid than it otherwise would have been. She also related a case of a woman 27 years old in whom four operations were performed, and adhesions were held to be the cause of her trouble. When no other pelvic organs were left adhesions formed with the intestines, and McBurney removed a portion of the bowel. In three and one-half months the patient was cured, and she is now an active member of New York's "400." In conclusion, Dr. Nordhoff-Jung

spoke of the necessity of selecting the cases for treatment, and stated that the method was by no means a panacea.

Dr. Anne A. Wilson referred to the growing importance of the method in the treatment of cases which had hitherto been considered as amenable only to operation. Within the last two years it had enabled her to correct displacements, break up or resolve adhesions, relieve dysmenorrhoea, etc. It had also proved a valuable aid in the diagnosis of pelvic affections. Not infrequently what appeared to be a growth in the pelvis was but the result of the matting together of the tissues as a result of an old inflammatory trouble. The adhesions could be resolved by pelvic massage, thus doing away with the necessity for operation. Masturbation was feared only by those who did not understand the technique. She emphasized the value of combining Swedish exercises with the pelvic massage. The former also influenced the local circulation. There could be no question as to the value of the method in selected cases.

CASE OF RENAL CALCULI; OPERATION.*

By J. F. MITCHELL, M. D.,

Washington, D. C.

This man, age 27 years, was operated upon this morning. He has been a terrible sufferer from renal calculus for years. Was first seen in consultation with Dr. Cook two years ago; he had then suffered from renal colic for six years. He walked with the aid of two canes and was very anemic and weak. X-ray examination showed an indefinite shadow in the left kidney; right kidney normal. The operation was performed in August, 1903. I opened the kidney along the dorsum through a lumbar incision. There was a large branching stone which filled the whole pelvis and salyces; it was removed in 15 fragments, some of them an inch in length. He did well for a time, but in October he had another mild attack; in December a severe one, and in January, 1904, another. A second operation was advised. The X-ray examination disclosed a large stone in the pelvis of the same kidney. The patient went South, but returned in May and entered the hospital. He had been under chloroform almost constantly for three weeks, so great was his suffering. The incision of the first operation was repeated, and a stone $1\frac{3}{4}$ by $1\frac{1}{4}$ inches was removed through an incision into the pelvis of the

*Reported with specimen to the Medical Society of the District of Columbia, March 29, 1905.

kindey. He was maniacal for ten days, after which he rapidly improved. Last summer he reported that he was again having attacks; again this winter. A few days ago he had a very severe attack and asked for an operation. An X-ray photograph taken by Dr. Ewing disclosed two fan-shaped stones, and three smaller ones. The operation was difficult on account of the density of the old adhesions about the kidney. The kidney was removed by shelling it out of its capsule; it contained the stones shown in the X-ray picture. The artery and vein were ligated separately, after which the pelvis and a part of the ureter were removed.

Dr. Vale said that the use of the "Compression-Blende" of Albers-Schoenberg in taking the X-ray picture in this case had indeed given a beautiful result, but it was better not to use it as a rule in the X-ray diagnosis of renal calculi, because of the number of exposures required with it to cover the entire field necessary to a negative diagnosis. The patient had been subjected to much good surgery, but Dr. Vale thought possibly by a careful study of the metabolic processes the return of the calculi after the first operation might have been prevented, and in this connection was surprised to learn that the man had not been placed on a non-nitrogenous diet. If that was not now done, unless some undiscovered local cause had been active in the formation of the calculi in the one kidney, the patient was again only temporarily relieved, and unfortunately could not sacrifice many more kidneys. He did not see why Dr. Mitchell had not performed a third conservative operation instead of removing the kidney, which was evidently able to carry on its share of work.

Dr. Bovée said that he did not recollect that Dr. Mitchell mentioned the condition of the other kidney; Dr. Bovée hoped that he was sure that it contained no calculi. He inquired whether the early stones were examined as to their nature, so that steps might be taken to prevent recurrence. It was unusual for so healthy a kidney to contain so many calculi. If there were no stones in the other kidney it was possible that there was some local trouble in the affected kidney that might have been cleared up.

Dr. A. F. A. King: Dr. Mitchell said that while the patient was at the Springs he seemed to be free from calculi. If it had been ascertained why he was free at that time it might have afforded a valuable indication for a line of treatment to prevent recurrence. Was it due to the water? The occurrence of lithiasis in one kidney only was remarkable.

Dr. H. A. Fowler said that the case was interesting from several points of view; as to the diagnosis, particularly the cystoscopic findings, as to the extreme suffering of the patient, the positive

result of X-ray examination, etc. The cystoscopic examination which he had made before the first operation gave but few positive results. There was no marked difference between the two sides of the trigonum as is usual in old cases of this trouble. The mucous membrane around the left ureteral opening was injected, and pus, blood and urine escaped from the left ureter. At that time it was comparatively easy to wash out the bladder and perform cystoscopy, but before the second operation it was a difficult matter on account of the rigid contraction of the sphincter; it was found to be impossible to pass a soft rubber catheter, and one of silver had to be used. The same condition existed yesterday when the last cystoscopic examination was made. This contraction frequently accompanied stone in the kidney or ureter. He mentioned another case in illustration. Yesterday the presence of the right kidney was demonstrated by seeing the urine escape from the right ureteral opening. The mucous membrane around this orifice was normal, but that around the left was much injected. The left kidney was also seen to be functionating, but to a much less degree than the right; there was also pus and blood. The left kidney was infected; the urine contained an immense number of bacilli.

Dr. Mitchell, in closing the discussion, said that it was an easy matter to say that the patient should have been studied and the return of calculi prevented; it was easier said than done. He knew of no sure way to prevent recurrence of calculi. This man was by nature a fly-about. He was first in this place and then in that; traveling around everywhere, and only returning when he needed surgical treatment. It was absolutely impossible to keep track of him or to make him follow any line of treatment. As to Dr. Bovée's point, no one now-a-days would remove one kidney without having first made sure that the other was present and competent. The final radical operation was the only thing possible. In addition to what had been said, there was great danger that the man would become addicted to the use of morphine and chloroform.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, April 5, 1905.—Dr. T. N. McLaughlin, President, in the chair; over 28 members present.

The following persons were elected active members: Drs. John Bradford Briggs, Johns Hopkins, 1902; Carl L. Davis, Columbian University, 1903; Harry H. Donnally, Columbian University, 1903; J. Ernest Mitchell, Columbian University, 1903; W. F. R. Phillips, Columbian University, 1890; B. M. Randolph, Medical College of Va., 1898; J. D. Rogers, Columbian University, 1902;

Dwight Gordon Smith, Columbian University, 1903; Peter H. Steltz, University Pennsylvania, 1888; Leon E. Story, Georgetown University, 1901; L. H. Taylor, Columbian University, 1903; Henry W. Tobias, Columbian University, 1901; Reginald R. Walker, Georgetown University, 1900.

The Treasurer reported for March, 1905: *Received*—Assessments, $20.00; advertising, $138.00; extra space, $4.00. Total, $162.00. *Disbursed*—MEDICAL ANNALS, Vol. IV, No. 1, $147.01; Recording Secretary stipend, first quarter, $50.00; janitor fee, first quarter, $30.00; extra space, MEDICAL ANNALS, $4.00. Total, $231.01.

Dr. J. Ford Thompson presented two specimens:

1. *Osteoma.*

2. Unusual keloid growth. Discussed by Dr. Balloch. See p. 171.

Osteoma.—The patient was a girl, 14 years old. About a year before, a tumor appeared upon the upper portion of one tibia. Although it was small, he removed it yesterday, chiselling it from the shaft and enucleating it from the periosteum. It much resembled the bony growth which he had presented before the Society the previous week.

Dr. Vale presented an X-ray negative illustrating the early pathological changes in pulmonary tuberculosis and the usefulness of the method in making an early diagnosis. He also exhibited the patient. Discussed by Drs. Claytor, C. Norman Howard, Acker and J. Dudley Morgan. See p. 172.

Dr. Friedrich read the paper of the evening. Subject: "A Case of Typhoid Fever with Complications." Discussed by Drs. S. S. Adams, J. Dudley Morgan, R. S. Lamb, Nichols, Claytor, Acker and J. Ford Thompson. See p. 167.

Wednesday, April 12.—Dr. McLaughlin, President, in the chair; over 60 members present.

Dr. Smith, Chairman of the Essay Committee, stated that Dr. W. T. Grenfell, who did all the medical and surgical work along 2,500 miles of Labrador and Newfoundland coast, would be in Washington the next week, but unfortunately not until after the Wednesday meeting of the Society. He had signified his willingness to address the Society upon "Medical and Surgical Work among the Deep-sea Fishermen of the Labrador and Newfoundland Coasts." Dr. Smith believed that the lecture would be exceedingly interesting. The Society ordered that a special meeting be held, the Executive Committee to set the date.

The following cases and specimens were presented:

By Dr. Hickling: *Uterine fibroid.*—Patient, a colored woman; aet. 27; domestic servant. Entered hospital February 28, 1905. Complained of pain in lower abdomen. Upon examination, a large and tender mass was discovered over the uterus. The growth was

first noticed five years ago, and since that time it had gradually increased in size. The symptoms were mainly a distressing, gnawing sensation in the lower abdomen and pain on pressure. Menstruation was regular, but the amount of flow was less than normal. Three months ago pain appeared in the hypogastric and lumbar regions; the menstrual flow was much diminished in quantity, but regular; there was frequent micturition; also anorexia and gradual loss of flesh and strength. On account of the symptoms, Dr. Hickling believed that the fibroid was undergoing a degeneration, possibly malignant. He removed the growth March 20, the uterus being amputated at the cervix. Recovery was uneventful, except for an attack of pneumonia following the operation. Dr. Nichols reported that the tumor was a myoma and had degenerated in the center.

By Dr. Isabel Haslup-Lamb: "Cretinism." Patient exhibited. Discussed by Drs. Acker, S. S. Adams, Wood and Claytor. See p. 174.

Dr. S. B. Muncaster read the paper of the evening: subject, "Treatment of Ulcers of the Cornea." Discussed by Drs. Butler, Wilkinson, Wood, R. S. Lamb and Polkinhorn. See p. 159.

Wednesday, April 19.—Dr. McLaughlin, President, in the chair; over 78 members present.

The following cases and specimens were presented:

By Dr. Acker: Porencephalus. Report of autopsy by Dr. D. S. Lamb. Discussed by Drs. D. S. Lamb, J. Ford Thompson and Haslup-Lamb. See p. 198.

By Dr. D. S. Lamb: Specimen of intestine, showing typhoid fever at end of second week.

Dr. I. S. Stone read the paper of the evening: subject, "Gastro-enterostomy for Non-malignant Diseases of the Stomach and Duodenum." Discussed by Drs. Stokes, Carr, Claytor, Vaughan and J. Ford Thompson. See p. 178.

Special Meeting, Thursday, April 20.—Dr. McLaughlin, President, in the chair. In the absence of Dr. F. P. Morgan, Dr. M. G. Motter acted as Secretary.

The Chair, with appropriate remarks, introduced Dr. W. F. Grenfell, who addressed the Society upon "Medical and Surgical Work among the Deep-sea Fishermen of the Newfoundland and Labrador Coast."

At the close of the address a vote of thanks was extended to Dr. Grenfell for his most interesting and instructive address.

Wednesday, April 26.—Dr. McLaughlin, President, in the chair; over 62 members present.

A communication from the president and secretary of the Retail Grocer's Association, D. C., asking this Society to co-operate in

securing the passage by Congress of a bill to enable creditors to obtain payment of indebtedness incurred by civil-sevice employes of the Government, was read and referred to the Executive Committee for consideration and report.

The following cases and specimens were presented:

By Dr. W. H. Hough: Aneurism of the arch of the aorta. Demonstration of specimens by Dr. Blackburn. Discussed by Dr. Vaughan. See p. 206.

By Dr. Vaughan: Goitre removed from patient 74 years of age.

By Dr. Snyder: Goitre.

These two specimens were discussed by Drs. A. F. A. King, Mitchell and Barrie. See p. 205.

By Dr. I. S. Stone, *Cholecystectomy.*

Dr. Stone presented a thickened and contracted gallbladder which he had removed, April 24, 1905, from a man who had had several severe attacks of gallstone colic with cholangitis. He had lost flesh and had been more or less of an invalid for at least five years. With the gallstone symptoms he had decided indications of gastric irritation and possible obstruction. The indications were those of slight obstruction at or near the pylorus. As the patient had just recovered from an attack of colic and the bile had just disappeared from the urine, it was interesting to observe the associated conditions found just after such an illness. The peritoneum was congested in the vicinity of the gallbladder and the duodenum was firmly adherent to the lower half of the organ. The bladder and duodenum were both entirely covered over by the adjoining adherent peritoneal surfaces, and the enucleation caused considerable hemorrhage. It was thought that the elevation and stretching of the duodenum and its adhesion to the gallbladder would account for the gastric disorders from which the patient had suffered. The bladder was separated from the liver and the cystic duct clamped. A chromic catgut ligature was placed around the cystic duct and it was firmly and carefully secured, yet Dr. Stone was disappointed to see bile escape from the drainage tube on the second day. The patient's condition, however, had been thus far quite satisfactory, although he had had a rise of temperature and some severe spasmodic pain. He had been accustomed to the use of morphia during his long illness and it was thought that the pain was exaggerated on this account. His condition was perfectly satisfactory on the 26th.

By Dr. Hickling: *Dislocation of carpo-metacarpal joint of first phalanx.* Discussed by Dr. J. Ford Thompson. (See VIRGINIA MEDICAL SEMI-MONTHLY, 1905, X, page 1.)

Dr. J. Ford Thompson said that the reason the man still had pain in his hand was because the ankylosis was of a tough, fibrous character, and there was some stretching of the fibers upon making passive motion. This pain was the main diagnostic point between fibrous and bony ankylosis anywhere in the body. Dr.

Hickling's result was an ankylosed joint. There was practically no motion, and what there was included the trapezium itself. One very rarely obtained any other result from an infected joint.

Dr. Hickling took exception to the statement that the joint had been infected. The infection did not reach the joint ; it affected only the superficial portions of the hand, the deeper tissues not being involved. In his opinion the joint was not entirely ankylosed ; there was a slight degree of motion. Whether this was so or not, he merely wished to show the results of treatment in this very unusual injury. He asked Dr. Thompson whether he had ever met with such a case before ?

Dr. Thompson replied that he had never seen an instance in which the dislocation was limited to one joint. It was very often observed, however, in crushing injuries of the hand.

Dr. Hickling said that in the library of the Surgeon General's Office he could not find a record of a case of the kind that he had reported. Hamilton reported two cases of backward displacement, but so far as could be ascertained, no instances of upward dislocation were on record.

Dr. A. B. Hooe read the paper of the evening. Subject, "Rational *vs.* Empirical Therapeutics." Discussed by Drs. Acker, C. Norman Howard, Motter, Kober, R. S. Lamb and E. L. Morgan. See p. 200.

Wednesday, May 3.—Dr. McLaughlin, President, in the chair ; over 50 members present. In the absence of the Secretary, Dr. M. G. Motter acted as Secretary.

The Treasurer reported for April, 1905, as received from assessments, $40 ; MEDICAL ANNALS, extra space, $2.50 ; MEDICAL ANNALS, advertising, $15 ; MEDICAL ANNALS, subscriptions, $1 ; entrance fees, $55 ; total, $113.50. No disbursements.

The resignation of Dr. F. S. Nash from membership was accepted.

Dr. Snyder presented a case of *Mayo's transverse operation for umbilical hernia* the patient exhibited. Discussed by Drs. Bovée, Balloch and J. Ford Thompson.

Dr. Snyder said that this was the first case of its kind in this city so far as he knew. The patient was a women 46 years of age, was very corpulent and there was much abdominal fat. The operation was performed July 12, 1904 ; there was no complication, and the patient was up and around again August 10. Dr. Snyder spoke of the difficulty attending operations for umbilical hernia, and described the rationale of Mayo's operation with the aid of blackboard illustrations.

Dr. Bovée questioned Mayo's right to the credit of having originated the operation. It was devised by Noble, of Philadelphia, in 1897.

Dr. Balloch said that as he recalled Noble's operation it provided for an overlapping from side to side. The essential points

in the Mayo operation were the transverse incision and the overlapping from below upward. These points constituted a distinct improvement in the treatment of large umbilical hernias. He had tried Mayo's operation in one case, with perfect satisfaction. The hernia, however, was not a bad one, so that his case was not so thorough a test of the method as was Dr. Snyder's.

Dr. J. Ford Thompson said that years ago he had dissected out the sac and stitched the walls together, and had met with failure. He was surprised that a recent text-book had advocated this obsolete method. The decision of the question as to the particular method of operation to be used was often attended with difficulty. He now used Mayo's operation in appropriate cases. Again, in other cases, he dissected out the tumor, and sewed the peritoneum and fascia together after proper dissection; split the sheath of the *recti*, but did not detach the whole muscle. One-half the width of the muscle on each side was overlapped in the median line, and the sheath was brought together over this. This method invariably gave good results. Hernia rarely occurred afterward. He was not quite satisfied that Mayo's operation was as satisfactory, because it left a weak spot; it gave two layers of the material of the *linea alba*, but no muscle.

Dr. J. Taber Johnson read the paper of the evening. Subject: "The Uses and Abuses of Pelvic Massage." Discussed by Drs. Sofie Nordhoff-Jung and Anne A. Wilson. See page 209.

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Editorial.

The Society suffered two losses in membership during the month of May in the death of Drs. Bayne and Kleinschmidt. Dr. Bayne died on the 17th and Dr. Kleinschmidt on the 20th. Memorial resolutions to each were adopted on the 24th, and will appear in our next number.

June 14 Dr. George P. Fenwick, one of the oldest members of the Society, died. An appropriate notice will appear in a future number of the ANNALS.

Medical Miscellany.

Memorandum showing the relative prevalence of certain communicable diseases from April 1, 1904, to June 1, 1904, and the same period of 1905.

DIPHTHERIA.

1904.			1905.		
Cases on hand April 1, 1904..	13		Cases on hand April 1, 1905..	12	
Cases reported from April 1, to June 1, 1904.....	33		Cases reported from April 1, to June 1, 1905.....	52	
Cases discharged, recoveries, ...		34	Cases discharged, recoveries		49
Cases discharged, deaths.....		0	Cases discharged, deaths.....		5
*Per cent. of fatal cases		0	*Per cent. of fatal cases.....		9.2
Cases on hand June 1, 1904..		12	Cases on hand June 1, 1905...		10
Total cases.....	46	46	Total cases.....	64	64

SCARLET FEVER.

1904.			1905.		
Cases on hand April 1, 1904..	40		Cases on hand April 1, 1905..	30	
Cases reported from April 1, to June 1, 1904.....	53		Cases reported from April 1, to June 1, 1905.....	83	
Cases discharged, recoveries, ...		66	Cases discharged, recoveries		70
Cases discharged, deaths.....		4	Cases discharged, deaths....		5
*Per cent. of fatal cases.....		5.7	*Per cent. of fatal cases.....		6.6
Cases on hand June 1, 1904...		23	Cases on hand June 1, 1905...		38
Total cases.....	93	93	Total cases.....	113	113

TYPHOID FEVER.

1904.			1905.		
Cases on hand April 1, 1904..	33		Cases on hand April 1, 1905..	21	
Cases reported from April 1, to June 1, 1904.....	57		Cases reported from April 1, to June 1, 1905.....	51	
Cases discharged, recoveries, ...		45	Cases discharged, recoveries		35
Cases discharged, deaths.....		18	Cases discharged, deaths....		8
*Per cent. of fatal cases.....		28.5	*Per cent. of fatal cases.....		18.6
Cases on hand June 1, 1904...		27	Cases on hand June 1, 1905...		29
Total cases.....	90	90	Total cases.....	72	72

SMALLPOX.

1904.			1905.		
Cases on hand April 1, 1904..	15		Cases on hand April 1, 1905..	6	
Cases reported from April 1, to June 1, 1904.....	4		Cases reported from April 1, to June 1, 1905.....	16	
Cases discharged, recoveries, ...		17	Cases discharged, recoveries		6
Cases discharged, deaths.....		0	Cases discharged, deaths.....		2
*Per cent. of fatal cases.....		0	*Per cent. of fatal cases.....		25.0
Cases on hand June 1, 1904...		2	Cases on hand June 1, 1905...		14
Total cases.....	19	19	Total cases.....	22	22

*The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

W. C. WOODWARD.

Eastern Dispensary and Casualty Hospital.—The ambulance service is now in force, and has been kept very busy. Quite a number of serious cases have been brought in since the installation of this service. One of the Board of Directors has purchased the lot west of and adjoining the hospital grounds and given it to the hospital. The fence is being removed so as to include this lot. The work of the hospital in all of its departments is increasing. Dr. P. L. Lloyd is resident physician, his assistants Drs. Robinett and Gannon, and Mr. Jarboe, fourth year student. Matron, Mrs. Ferris. Nurses, Misses Hess and Reid. Driver, Jesse W. Williams. C. R. DUFOUR.

George Washington University, Medical Department.—The 84th annual commencement of this Department was held in Memorial Continental Hall, May 29, 1905. The degree of Doctor of Medicine was conferred upon 62 candidates, the largest class in the history of the institution.

The Faculty prize, offered for the highest average standing in all examinations for the four years was won by Dr. Walter W. Wilkinson, of Virginia, who made a general average of 93 per cent. First honorable mention was given to Dr. Joseph A. Murphy, of the District of Columbia, who made a general average of 92.6 per cent.; second honorable mention to Dr. Adam Kemble, of Pennsylvania, general average 91.4 per cent., and third honorable mention to Dr. Glenn I. Jones, of the District of Columbia, general average 90.9 per cent. Several prizes offered by the individual professors for proficiency in their respective branches were also awarded: The Yarrow prize, given by Professor Henry C. Yarrow for the best standing in Dermatology, was awarded to Mr. Arthur N. Tasker; this prize is always given to an undergraduate. The Richardson prize, given by Professor Charles W. Richardson for the best work in Laryngology and Otology, was awarded to Dr. Joseph A. Murphy, and the prize given by Professor George N. Acker for the best examination in Pediatrics was awarded to Dr. George W. Stiles, Jr., of Oklahoma. The prize given by Dr. W. K. Butler for the best work in Ophthalmology was awarded to Dr. Samuel C. Henning, of North Dakota.

The address to the graduates was delivered by Professor Charles E. Munroe, Ph. D., who took as his subject the Lord Protector's motto: "*Qui cessat esse melior, cessat esse bonus.*" Dr. Munroe spoke of the value of Medicine to general science, the contributions that had been made by medical men, and the close relations which always had existed between Chemistry and Medicine.

The following is the list of graduates:

DOCTOR OF MEDICINE.—F. A. Allen, Minn.; S. D. Austin, Miss.; H. E. Baldwin, Ill.; R. W. Browne, Mass.: Z. M. Brady, Md.; H. B. Bryan, Va.; E. W. Burch, Md.; D. P. Bush, Neb.;

G. H. Camp, Penna.; W. W. Christmas, N. C.; W. F. Cowan, Wis.; R. A. Fisher, D. C.; T. M. Foley, D. C.; E. T. M. Franklin, Va.; W. J. French, Minn.; E. B. Graham, N. Y.; E. J. Gunning, Penna.; Tharos Harlan, Md.; F. M. Hart, N. Y.; F. C. Hayes, Ill.; S. C. Henning, N. D.; R. J. Hillegas, Penna.; J. H. Holland, D. C.; A. G. Hovsepian, D. C.; W. B. Hudson, Conn.; A. L. Hunt, Me.; F. H. Jett, Ind.; F. T. Johnson, Mich.; G. I. Jones, D. C.; Adam Kemble, Penna.; Emil Krulish, Iowa; F. W. Kuehn, Ind.; A. C. Lewis, Va.; W. H. Littlepage, Ark.; J. M. Lynch, Tex.; F. L. Martine, N. J.; A. N. Meloy, Md.; J. A. Murphy, D. C.; E. S. Newton, Mass.; A. C. Norcross, Penna.; E. L. Osborne, Ga.; C. A. Pfender, Tex.; J. T. Prevatt, Ga.; T. W. Raison, Ky.; A. H. Robnett, Tex.; W. P. Rogers, Neb.; E. W. Sawyer, Mass.; G. J. Sells, Tenn.; W. E. Shea, Idaho; L. C. Smith, Va.; Edgar Speiden, Jr., D. C.; Gordon Stanton, S. C.; G. W. Stiles, Jr., Okla.; J. A. Talbott, Jr., Md.; W. G. Trow, D. C.; C. L. Waters, Md.; M. H. Watters, Vt.; R. T. West, Md.; J. J. Wharton, Md.; L. L. Whitney, N. Y.; W. W. Wilkinson, Va.

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WASHINGTON MEDICAL ANNALS

CASE OF UNUSUALLY LARGE URETERAL CALCULUS; TRANSPERITONEAL URETERO-LITHOTOMY.*

By J. WESLEY BOVÉE, M. D.,

Washington, D. C.

M. S., thirty years of age, was admitted to Columbia Hospital for Women, May 5, 1904. She had had two children, the last, January 27, and no other pregnancies. Menstruation had been normal, the last period having occurred in April, 1903. A few weeks after her last delivery she began to experience severe pain in the right inguinal region and small of back, which has grown much worse in the past month, although not constant in character, but worse upon exertion. The pain is now dull and aching.

Examination, May 8.—Uterus normal in size and position except slight displacement of cervix to the left by a dense, fixed and ovoid mass in or just behind the right broad ligament.

Urinalysis, May 8, of a catheterized specimen.—Straw color; cloudy and contained heavy white sediment; reaction, alkaline; urea two grains to the ounce; large quantity of albumen; abundant pus cells and a few phosphates were found with the microscope.

Operation, May 10.—Transperitoneal uretero-lithotomy. When the abdomen was explored the uterus and appendages were found to be normal and free from adhesions. The dense mass previously mentioned was found to be located in the right broad ligament with its longest diameter transverse, the largest portion being nearest the uterus. An incision upon the mass showed it to be a calculus in the ureter, and in the dissection incident to this discovery, the ureter was accidentally opened, allowing the escape of a few ounces of flaky urine. The ureter was now incised, the stone extracted, the lowest inch of the ureter dilated, the upper part of the ureter explored, the cavity cleansed and the ureteral

* Reported, with specimen, to the Medical Society of the District of Columbia, May 31, 1905.

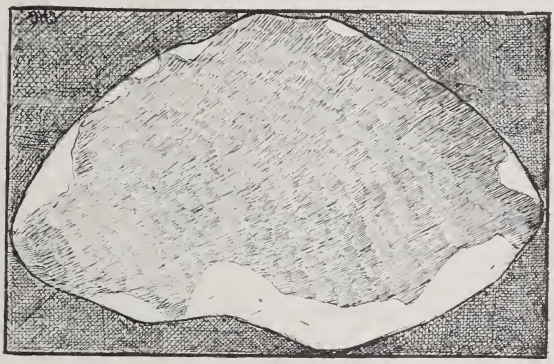
wall and broad ligament closed with three layers of continuous catgut sutures. Nothing abnormal about the kidneys and upper portion of the ureter was discovered by palpation. Vaginal gauze drainage was established. No leakage occurred, and the patient made an uninterrupted recovery.

Urinalysis, May 11.—Catheterized specimen. Color, dark red; reaction, neutral; specific gravity, 1,028; urea, 8 grains to the ounce. Microscopical examination showed red blood cells and an abundance of pus cells. May 12 the urine was acid and contained very few pus cells.

Stone.—The calculus had diameters of $2\frac{3}{4}$ by $1\frac{3}{4}$ by $1\frac{1}{2}$ inches; weight, 1,310 grains, kidney-shaped, one end larger than the other; grayish in color; surfaces rough. On section it was found to consist of several concentric layers of phosphatic formation, covering over a decidedly dark mass one inch in diameter, which contained many layers, composed of a deposit of calcium oxalate. This calculus is larger than any removed from the ureter that I have been able to find recorded in medical literature. In this case the diagnosis was not made before operation, owing to pressure of my time from heavy work. The condition of the urine in conjunction with the location of the mass should have aroused a suspicion of its character. Bladder exploration, however, and the absence of functional urinary symptoms led to the belief that the mass was a migrant fibroma.

History.—The history of this operation is not devoid of interest. In 1856 Gigon recommended opening the ureter through the loin to remove ureteral calculi. In 1870 Bryant, at Guy's Hospital, incised and explored the renal pelvis through a loin incision. In 1882 Bardenheuer incised and explored the ureteral pelvis for calculi and sutured the wound made in it. In 1884 Henry Morris proposed rapid dilatation of the female urethra, and urethrotomy just in front of the prostate in the male, and then proceeding transvesically to remove calculi from the very lowest portion of the ureter. At the same time Emmet did vaginal ureterotomy, removing calculi with the curette. In 1885 Cullingworth planned and performed uretero-lithotomy through a lumbar incision. In 1887 Ceci removed a calculus from the lower portion of the ureter by the rectal route. Desault, in 1887, used and recommended his kiotome for incising the uretero-vesical junction in order to facilitate transvesical extraction of calculi from the lower portion

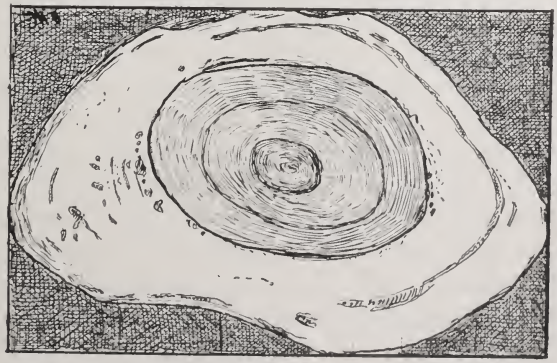
of the duct, and in 1888 Richmond, of Missouri, succeeded in removing a stone lodged near the exit of a ureter by means of rapid urethral dilatation and the introduction into the bladder of a finger and tenaculum. In 1886 Isreal reported removing calculi from the upper part of the duct. Bergman, Kirkham, R. B. Hall, Twynam and others did this operation previous to 1890.



URETERAL CALCULUS WEIGHING 1310 GRAINS.

WHITE AREAS REPRESENT SLIGHT SCALING ACCIDENTALLY MADE WHEN THE STONE WAS SAWED THROUGH

Size and Number of Calculi.—The sizes of ureteral calculi vary from the merest particle to dimensions of several inches. According to Henry Morris, LeDran quotes a case in which there were several calculi, weighing together three ounces, impacted in the



APPEARANCE ON SECTION OF THE SAME.

middle part of a ureter. Sometimes several are present, Morris having removed nine from the lower part of one ureter. In some autopsies both ureters have been found filled by a large number of impacted calculi. To find two or three at different points along the duct is far from uncommon.

Routes.—The routes for reaching and extracting ureteral calculi are the transperitoneal and the extraperitoneal. The latter may be subdivided into loin, inguinal, vaginal, rectal, sacral, perineal and transvesical. The transperitoneal route should never be the one of election, as the danger of peritoneal infection from the urine is too great. Infected urine is a condition so constant in ureteral calculus that it is never absent and should almost never be allowed to come in contact with the peritoneum. It may occur, however, that a calculus in the duct may first be discovered or diagnosed when the abdominal cavity is opened for some other condition. In such event one may, in the absence of symptoms indicative of urinary infection and under favorable conditions, remove the calculus transperitoneally. This is particularly true regarding the portion of the ureter under the pelvic peritoneum in women.

Of the extraperitoneal routes the selection will depend largely upon the location of the calculus or calculi, though the operation of Ceci, of removing it through the rectum, could only be considered justifiable when the stone has practically sloughed through into the rectum. Surely the danger of ascending renal infection is very marked. When the calculus lies in the intravesical portion of the ureter of a woman, it may usually be removed by dilating the urethra and then the ureteral opening and extraction through both. Morris removed a calculus from the lower part of the duct through an incision along the border of the sacrum. In women, the lower three inches of the duct may be fairly well reached through the vagina. Especially is this route available for those cases in which the stone lies in the broad ligament portion. Through a lateral incision the perineal route has its advantages in the male, but not in the female. This leaves for consideration the routes that lie above the bony pelvis. Of these two neither has any advantage over the other, as the indications for each differ from those of the other. In 64 cases of ureteral calculi operated on by the extraperitoneal route the calculus was located 22 times in the ampulla and adjoining inch; 17 in the duct at the

iliac crossing; 18 in the lowest inch; 4 at the entrance to the broad ligament; 1 both near the ampulla and at the iliac crossing; and in 2 the ureter was filled with calculi. This would seem to demonstrate the loin route to be the most frequently employed. If the loin incision be prolonged downward but a little, access to the portion just above the iliac crossing will be afforded, and thus 61 per cent of the cases of ureteral calculi may be treated by this route. I was not able to ascertain the sex in these collected cases and cannot state how many of the 18 in the lowest inch were in women, but in that sex the vaginal route, as a rule, is the best, though the transvesical should not be ignored. In the male the inguinal is the best. When the calculus is at the entrance into the broad ligament, the inguinal is preferable to the vaginal route.

In a class of cases characterized by the stone having been lodged in the intravesical portion of the duct and later sloughed into a pocket in the bladder wall which it has made for itself, the vaginal and inguinal routes are the only safe ones, though in so stating I am not unmindful of the number of cases in which suprapubic cystotomy has been done.

Removing the Calculus from the Ureter.—For removing the calculus from the ureter the different procedures have been: 1, pushing the stone in a reverse direction to its passage and extracting it through the wall of the duct at a more favorable point, or through the kidney structure; 2, dilatation of the portion of the duct below the calculus and removing the stone through the bladder; 3, longitudinal ureterotomy at the point of lodgment of the calculus; and, 4, intraureteral injections of sterilized vaseline, as recommended and employed by Schmidt, of Chicago. The first method has special advantages and is applicable to the whole length of the duct save the lowest inch. In many cases the kidney must be explored as well, and if the stone can be forced back through the kidney incision it is preferable to ureterotomy. Even if the kidney is not incised extraction after pyelotomy is better than by ureterotomy farther down, as there is less apt to be interference with healing of the incised wound from necrosis or bruising and less danger of angulation or lessening of its caliber. When a stone, especially of the mulberry type, has been lodged at one point a considerable time it is apt to corrode to a marked extent the ureteral wall. Such corrosion interferes with good and

prompt union if ureterotomy is done at that point. Therefore the duct should be opened at some point above the lodgment and at the same time conveniently reached through the operation wound. Here healthy tissue may be traversed that will be rapidly repaired and with much lessened danger of ureteral constriction. When the calculus is lodged in the intravesical portion no doubt transvesical extraction is best. This may be done by dilatation of the ureteral orifice and the portion of the duct separating the stone from the bladder cavity. Should stricture within this portion be present it may be divided at the same seance. Young, of Baltimore, has found these in a few cases, and probably that was the condition noted by Desault in 1887 which gave birth to his kiotome. The ureteral dilatation and lithotomy mentioned may be done in most cases by the use of the cystoscope; but in some cases, and especially when the calculus is large, suprapubic or vaginal cystotomy will be required. When the calculus is lodged in the broad ligament, or in the male in the juxtavesical portion, great difficulty may be encountered in attempting to move the stone backward along the duct, and dilatation of the untravelled portion rendered hazardous. Again, the size of the calculus may at once preclude all possibility of such work. When the stone is very large nothing remains to be done but ureterotomy on to the stone *in situ*. The method of Schmidt is probably valuable in small calculi. Kolischer and himself have reported cases successfully treated with it, and they are enthusiastic in their recommendation of it. I have had no experience with it, but its innocence, compared to the traumatism of other surgical interventions, prompts me to decide to adopt it in cases in which the calculus is small, except those in which it is lodged in the very lowest portion of the duct.

Searching for other Calculi.—When the stone has been removed search for other calculi should be made throughout the whole length of the duct, and if the loin incision be the one employed it is advisable to satisfy one's self that none is within the kidney. A sound may be gently passed upward into the calyces to assist in palpation, though it may not furnish conclusive proof of the absence of renal calculi. Should ureteral constrictions exist they may be discovered by this systematic exploration of the duct. The possible existence of a second ureter similarly affected should not be forgotten, nor should unnecessary traumatism be produced.

Treatment of the Ureteral Opening.—If the ureterotomy wound be through practically normal tissue and the ureter below it free from obstruction, sutures may be employed to close the duct. They should be interrupted, placed in two tiers and passed through all the wall except the mucosa. Absorbable material for this purpose is certainly of special advantage. Even infected urine should not modify this plan nor should drainage influence it. If the tissue through which the incision is made be necrotic the open wound, if small, would probably be preferable. If, however, a large calculus be removed, the wound must necessarily be long and sutures must be employed, though leakage seems probable, as the tendency to longitudinal constriction is great with the long, open ureteral wound. Obstruction of the ureter below the wound would lessen the advisability of suturing, though not to its exclusion in all cases. If the function of the kidney has been destroyed by long standing complete ureteral obstruction sutures should not be used.

Drainage.—All uretero-lithotomy wounds should be drained. This is because the urine is practically never normal, therefore rendering wound infection probable. The possibility of urinary leakage subsequent to operation affords another positive indication for drainage.

TWO CASES OF TRANSPOSITION OF VISCERA; HEREDITARY.*

By B. M. RANDOLPH, M. D., and J. D. THOMAS, M. D.,

Washington, D. C.

Louis M., age nine, Hebrew, was brought to the Children's Clinic in Emergency Hospital, April 29, 1905. The mother stated that the child had some cough and a little expectoration; was more or less constipated, and had poor appetite. Had never had any serious illness except diphtheria in early childhood, but has always been weak and poorly developed. Is the fourth of five children. The others are thin, but healthy.

I do not propose to discuss the pathological side of this case, but will merely say that I consider it a case of simple anaemia from malnutrition and poor hygiene, and that he is improving

*Reported and patient presented to the Medical Society of the District of Columbia, May 17, 1905.

under treatment based on that diagnosis. The interesting features of the case are those revealed by physical examination. In general appearance the boy is small for his age, sallow, very thin, lethargic in movement and slow of speech. The skin is transparent and the superficial veins of the neck and abdomen are prominent. He is symmetrically formed and right-handed. Respiratory movements are ample and equal on both sides. No cardiac impulse is visible or palpable in the normal situation.

On the right side, one-half inch within the nipple line and one inch below the level of the nipple in the sixth interspace, is seen a distinct, clearly-defined rhythmic pulsation, conveying to the palpating hand the sensation imparted by the normal apex beat of the heart somewhat exaggerated. I outlined the area of cardiac dullness very satisfactorily. It extends upward to the fourth costal cartilage on the right side of the sternum; outward to the right nipple line; inward to the left border of the sternum. Auscultation shows a soft systolic murmur, rather diffuse, but more pronounced at the apex. This murmur varies in intensity and is not always present. The heart sounds are somewhat exaggerated and diffuse. There is a slight tendency to arhythmia. The second sound is plainly heard over the entire basic region, but is much more pronounced in the space between the second and third costal cartilages on the right side. As it is the pulmonary second sound which is accentuated in children, I conclude that this sound is heard with greatest intensity on the right side of the sternum; in other words, the transposition of the heart is symmetrical, the ventricle of the aortic or peripheral circulation being to the right or outside, and that for the pulmonary circulation being to the left or median side.

Examination of the lungs shows the following variations from the normal. Physical signs of a sub-acute catarrh of the larger bronchial tubes are present. There is normal pulmonary resonance over the area of normal cardiac dulness on the left of the sternum. There is absolute dulness on the left side over the area corresponding to that usually occupied by the liver on the right side. There is absence of dulness on the right side in the area usually occupied by the liver. In its place light percussion gave normal pulmonary resonance, and deep percussion along the lower portion of the right thorax laterally gave the characteristic note of the stomach when moderately distended and containing gas.

Fluoroscopic examination confirmed the findings of the physical examination. We saw the heart on the right side, normal in size and contour, its long diameter extending from above obliquely downward and to the right. The liver could be seen on the left side occupying the situation corresponding to that usually occupied by this organ on the right, falling and rising with deep inspiration and expiration.

While we have only shown in this case that the heart, liver and stomach are symmetrically transposed, it is fair to assume that the case is an instance of complete transposition of the viscera. Such cases are exceedingly rare, and for that cause very interesting. I hope in the future, when this boy is in better condition and more used to handling, to demonstrate the situation of the stomach and sigmoid flexure, either by inflation or transillumination.

I have been able to find so far only one autopsy case of complete transposition of the viscera, viz: that of Dr. Arnold Koller, of Zürich, reported in 1899. Koller's report of his case and remarks on the subject are very complete, and I am indebted to him for most of my information on the subject. His case shows absolutely complete transposition of organs, vessels, nerves, etc.; in short, in every minute detail, where there is normally a difference in situation, distribution, direction or dimension between the structures of the right and left sides, there was reversal in his case.

An exceedingly interesting feature of this case is the fact that the maternal grandfather of this boy presents the same phenomena. I know of no instance where any hereditary connection has been shown in this condition. I am indebted to Dr. John D. Thomas for informing me of the relationship and presenting his case in connection with mine. The mother, sisters and brothers of this boy have the normal situation of their organs.

We know nothing of the etiology of this condition. Some rather ingenious attempts have been made to explain it. One is that some important viscus in a very early period of fetal life becomes reversed in position, and the rest follow. St. Hilaire claimed that the viscus producing this result was the liver, Rindfleisch and Dareste the heart, Valsuani the alimentary canal, Baer, Bischoff and Förster the umbilical vesicle. Quite a number of experiments were made on incubating eggs to bring about this result, but with meager results.

Another view that has been very vigorously advanced is that it is due to the formation of fetal monstrosities of a double nature, having two sets of organs, in which one set of organs disappears as fetal life progresses. This fanciful idea was suggested by the fact that such monstrosities do occur, having double organs symmetrically situated. Against this we might mention the Siamese twins, whose organs occupied the normal situation; and further, Neelsen collected a number of cases from the literature, especially three thoracopagi, where both fetuses had the normal situation of the viscera.

Cruveilhier (who died in 1874) said; "Transposition of the viscera is a fact which we must admit, just as we do the regular position of the organs, but a fact which evades every theory." That statement applies as well today as it did in Cruveilhier's time.

In conclusion, I wish to thank Dr. Shands, in whose service this case occurred and by whose courtesy I report it, and Dr. Groover, in charge of the X-ray laboratory of the Emergency Hospital, for his trouble and courtesy in making the fluoroscopic examination and the X-ray photograph.

Dr. J. D. Thomas said: "The patient I present is a Polish Jew, about 65 years old. Has been in this country some years; was a farmer in Poland. He came into the chest clinic of Dr. T. Morris Murray at the Emergency Hospital about eight months ago, and in making the regular examination for all patients I soon discovered the transposition of his heart, liver and stomach. He has a chronic emphysema and cough and a ventral hernia; also gastric indigestion. A fluoroscopic examination then showed the heart, liver and spleen transposed, and the X-ray negative shows in the gross the transposition of the viscera. It had been my intention for some time to show this case to the Society, and when, a week or so ago, in examining Dr. Randolph's case, I found that he was a grandson of my patient, the interest in this medical curio was heightened by the evident element of heredity in it. So Dr. Randolph and I thought it would be of double interest to the Society to present them together.

"The case, as I said, is shown merely as a medical curio, for the condition does not seem to have been an element at all in influencing his pathological condition. I am indebted to Dr. Groover for the X-ray plate of this case."

Dr. S. S. Adams spoke briefly, recalling a case of transposition of the viscera exhibited before the Society a year or so ago by Dr. Blackburn. The interesting feature of the present case was the element of heredity, which was brought out by Dr. Thomas' patient.

Dr. Acker said that he had seen but two instances of transposition of the viscera, one of which was the case of the young soldier exhibited by Dr. Bannister before the Society a couple of years ago.

CASE OF DOUBLE PYO-SALPINX.*

By J. WESLEY BOVÉE, M. D.,

Washington, D. C.

E. C., colored, 23 years old, was admitted to Columbia Hospital for Women, Washington, suffering with severe pelvic pain. Her parents were healthy; six sisters had died, two of them of tuberculosis, and two brothers had died of the same disease. She had had two children. She had been ill since the birth of the last child, four years ago, suffering with pain in the back and loins and leucorrhoea. At that time she had a "lump" in the right lower abdominal quadrant. During the past six months her menstrual periods have lasted two weeks and been very profuse.

She was very anaemic and emaciated, and during her stay in the hospital previous to operation had an irregular temperature with excursions from 97 to 103. The abdomen was slightly distended and the pelvis was occupied by a fixed mass, diagnosed as tubercular pyo-salpinx. As tubercular peritonitis was suspected, the abdominal route was selected for the operation. When the abdomen was opened no tubercles was seen in the peritoneum, but the intestine and omentum were found covering in the uterus and attached to the bladder. On either side was noticed a bow-shaped pus tube about three inches in diameter, with the convex side lying against the anterior abdominal wall, but for three or four inches non-adherent. The retrouterine space was filled by the mass mentioned. When the fundus uteri was exposed it was grasped near each cornu by a vulsellum and the organ was longitudinally hemisected anteroposteriorly. One lateral half of the *portio vaginalis* was grasped by a vulsellum and brought up to the abdominal incision, and by scissors and clamps the half uterus

* Reported, with specimens, to the Medical Society of the District of Columbia, May 10, 1905.

and corresponding tube and ovary were separated from vagina to infundibulopelvic ligament. This operation was repeated on the other side and the vessels hemostased by Downes' electrothermic angiotribe. When the fimbriated ends of the tubes were freed some pus escaped, but was readily caught on gauze. A thick strip of gauze was pushed through the vagina and filled lightly the pelvic excavation, into which considerable oozing was taking place.

In this case the abdominal route was selected because tubercular peritonitis was thought to be a complication. Otherwise the same operation would have been done by the vaginal route. The uterus would have been split in the opposite direction, however, after the French method, principally advocated and practiced by Jacobs, of Brussels. At the time it was first advocated by him, America did not seem to accept it, but it has now come to be a frequently performed operation in this country. We have learned more of the characteristics of pelvic suppurations in women and methods of successfully dealing with them.

While many of us had previously done this splitting operation from above, I believe that the first minute description of it was made by Kelly before the Southern Surgical and Gynecological Association, at Atlanta, about five years ago. I merely present these large specimens to again call attention to this method of attacking such conditions.

CASES OF EXCISION OF THE HIP JOINT FOR HIP DISEASE.*

By J. FORD THOMPSON, M. D.,

Washington, D. C.

Case 1. Colored girl, age 10 years; admitted to Children's Hospital February 23, 1905; was treated last summer for hip disease. Two months ago her condition became much worse. When admitted she limped perceptibly and suffered much pain. Operation, excision of hip joint, was performed by Dr. Thompson April 19, since which date there has been a steady improvement in her condition. [Dr. Thompson presented a specimen in connection with this case.]

* Reported to the Medical Society of the District of Columbia, May 24, 1905.

Case 2. Colored boy, age 3 years; admitted to Children's Hospital September 10, 1903. Pain in the hip joint and limping were first noted in January, 1903. Dr. Thompson operated on the child January 5, 1904, and again April 19, 1905. After the second operation the wound healed kindly, and there has been no discharge of pus.

Case 3. Colored boy, age 11 years; admitted to Children's Hospital April 18, 1905. First complained of pain in the hip joint a year ago. Three months ago a sinus formed in the hip, and pus has been discharged ever since. Much pain. When admitted there were four sinuses in the region of the hip. Operation performed by Dr. Thompson April 19, and since then the patient has made a steady general improvement.

In further explanation of the cases Dr. Thompson said that some weeks ago he happened to mention to Dr. Smith that he had excised three hip joints in one morning. Dr. Smith thought this very interesting, and asked him to report the cases, which he promised to do. He regretted that Dr. Shands was not present, as this was a good opportunity to thoroughly discuss the subject. Dr. Thompson had performed the operation many times, and had often done two in one morning, but to do three was exceptional. From a surgical point of view such a statement would make it appear that some rash surgery was being done in a conservative field. All of these cases, however, were old, neglected cases. He only operated when the patient was hopelessly ill, so far as other treatment was concerned.

There was no ideal cure for hip-joint disease. The time to cure it was in the primary, or possibly the secondary stage. He contrasted the advantages and disadvantages of excision and erasion of the hip joint, and said that erasion was generally preferable, because it did not cause the ugly shortening of the limb which attended excision. In performing excision it was almost always impossible to avoid interfering with the epiphyseal line; hence, as the child advanced in years the operated limb became relatively shorter than the other, causing an ugly limp. Erasion did not have this disadvantage. He described his method of performing both operations. He knew of no way to do away with the limp caused by excision. It should be remembered, however, that the deformity was by no means as great as that which resulted from neglect. He supposed that he had done over a hundred excisions

of the hip joint without a death, and yet the books say that the mortality is high. His object in presenting the specimen was to bring out a discussion, particularly from the orthopedic surgeons, as to the disease and the best way to cure it in its early stages after it has once arisen.

Dr. Thompson spoke of Sayre's ambulatory treatment of hip disease. Many limbs were ruined by the short-splint method of treatment. Other forms of treatment which he devised were, however, eminently successful. Extension with weight and pulley was also very unsatisfactory; the great trouble was to keep the child quiet. If the cases were treated properly in the first place they could be cured. While the diagnosis was ordinarily a simple matter, serious mistakes were not infrequently made. He related how a prominent orthopedic surgeon in Philadelphia made an error in the case of one of Dr. Thompson's patients whom he took over there for a consultation. The eminent specialist said that the child had no hip disease, only a rheumatism of the joint; he advised that the dressings be discarded, and that the child be allowed to run around and play. The neglect which resulted from this error in diagnosis, for such it turned out to be, resulted in a great permanent, angular deformity of the affected limb. In conclusion, Dr. Thompson emphasized again the point that if these cases were properly treated in the early stage, many of them would recover, and there would be no necessity for resorting later to radical measures.

Dr. Balloch said that there was no question but that the cases reported by Dr. Thompson were instances of a mixed infection, and that the patients would have died if operation had not been performed; hence, operation in these cases was a conservative measure. The only question was as to the propriety of operating in the second stage of the disease. He agreed with Dr. Thompson that operation should not be performed so long as the skin was unbroken. He spoke of the wonderful reproductive power of the periosteum, and emphasized the point that as much of this membrane as possible should be saved. He also emphasized the importance of early diagnosis and treatment.

Dr. Neff said that at the stage at which Dr. Thompson saw the patients there was nothing to be done but to operate. At the recent Tuberculosis Congress there were advocates of the open-air treatment of surgical tuberculosis, particularly in its early stages. He emphasized the importance of early recognition and treatment.

Dr. Reyburn said that there could be no question as to the pro-

priety of surgical interference in Dr. Thompson's cases. He emphasized the importance of early diagnosis. He had become much interested in the beneficial results of the open-air and sea-air methods of treating tuberculosis. The French established the first hospital of this kind at Calais in 1861. There were 750 beds in one such hospital there now. In America the first institution of the kind was at Coney Island; it flourished, and is now doing well. The object of the treatment was to keep the patient in the open air all the time, and preferably in sea air. The results which had been accomplished were little short of marvelous. He mentioned one case treated at Coney Island; it was at first believed that it would be necessary to amputate the patient's foot on account of tubercular disease; under the treatment, however. he improved rapidly, and was now walking around.

Dr. Behrend said that Dr. Thompson had stated that early diagnosis was not difficult and that the institution of early treatment would prevent suppuration. In some cases there was no opportunity for making a diagnosis or directing treatment; there was a sudden outburst of inflammation in the joint, simulating acute inflammatory rheumatism, without previous symptoms, and an abscess suddenly broke. When these conditions did not obtain, however, the diagnosis was, as stated by Dr. Thompson, not attended with any especial difficulty. He was much interested in the open-air and sea-air treatment of these cases. He had a brother who was afflicted with a great suppurating wound of the knee joint, and he had to hobble around on crutches. He took a ten-weeks' sea voyage, and as a result the wound healed, he discarded his crutches, and he is now a well man. Another brother had a similar affection in the hip and was cured in the same way. Dr. Behrend believed that nothing could compare with sea air as a treatment for tubercular joints.

CASE OF HYSTERECTOMY FOR SLOUGHING DEGENERATED FIBROMA OF THE UTERUS.*

By H. D. FRY, M. D.,

Washington, D. C.

Ida C., age 34, colored, was admitted to Garfield Memorial Hospital, Washington, April 23, 1905. Her family history is negative; she remembers nothing of her people. She had varicella, mumps, measles and whooping cough in her childhood, with good recoveries. Since that time has been in excellent health,

*Reported, with specimen, to the Medical Society of the District of Columbia, May 17, 1905.

with the exception of an occasional attack of bronchitis, until February last.

Menstruation began at the age of 14, six-day type. Until about five years ago it was regular and she experienced no unusual discomfort in this respect. At that time she began to be troubled with dysmenorrhoea and menorrhagia, backache, headache and pain in her legs, which symptoms have persisted, with periods of exacerbation and remission, until the present time. Has had three miscarriages. Last pregnancy ended February 4 last, the only one she has carried to term, and since that time she has suffered a great deal from pain and a continual discharge. For three years previously, she says, she had noticed a progressive enlargement of her abdomen, but attributed it to drinking a great quantity of water. With the February pregnancy her abdomen was exceedingly large. She was in labor seventy-two hours, and the child was finally delivered with instruments and was dead. She had some slight trouble afterwards with her breasts becoming hard and painful, but this condition disappeared. She remained in bed sixteen days, but contracted a severe cold shortly after going home. Was very weak and sore in her abdomen, but resumed her work; had a leucorrhoeal discharge. No history of venereal disease. Urination frequent at times but rarely painful.

Her present illness began three weeks before admission to hospital. The foregoing symptoms were aggravated by the appearance of a profuse sero-sanguineous discharge from the vagina, containing a flaky detritus; the odor was bad. Later the discharge became bloody and she passed a large number of clots. The urine was red. She had had several chills. Had been very thirsty but promptly vomited anything taken by the mouth. Pain in lower portion of abdomen has been intense, of a dull, aching character, and somewhat localized in hypogastrium. Entire abdomen is tender on pressure. Bowels have been normal.

The temperature, pulse and respiration were as follows: April 23d, 103.4, 108, 24; 24th, 102.4, 96, 24; 25th, 102.4, 90, 24; 26th, 101.2, 104, 30; 27th, 99.8, 100, 28; 28th, 99, 96, 24; 29th, 99.6, 90, 28; 30th, 98.6, 104, 24; May 1st, 98.6, 98, 24, and hysterectomy was performed.

The blood count, April 24, showed 14,000 leucocytes; urine, 1,006, contained pus and bacteria, but no albumen, sugar or casts. She was much constipated. A hot sterile douche was

given April 23d, and an intrauterine douche on the 25th, the water returning with pus and shreds of tissue. The douches were continued twice daily. Whiskey, strychnine and digitalis were also given. Convalescence uneventful; she was discharged May 29, and since then has continued in good health.

Dr. I. S. Stone said that he had had but little experience with these tumors as a cause of dystocia. He raised the question as to the advisability of performing the operation before labor came on.

Dr. J. Taber Johnson said that but few had had experience in this particular line. There were many different opinions as to the best method of dealing with the cases, and the question had never been satisfactorily settled. One must do what seems best under the circumstances. It was unquestionably a fact that the more we knew about fibroids, their evil effects, complications, tendency to degenerate, etc., the more we were inclined toward early interference. Gordon, of Portland, recently advocated the removal of every fibroid which has reached the size of a lemon; many who were present at the meeting dissented from this view; but Dr. Johnson believed that many gynaecologists were coming over to Dr. Gordon's side. The importance of interference lay not so much in the present effects of the growth as in the subsequent tendency to degeneration, etc. He himself believed that the best way to treat fibroids was to get rid of them by removal. Many gynaecologists went further, and advocated the removal of the uterus also in order to relieve the patient of the possibility of future trouble along the same line. The best way was to get rid of the fibroids before pregnancy occurred, as soon as possible after the diagnosis was established. Hysterectomy, in the absence of infection, was perfectly safe; the mortality was as small as that attending excision of the appendix.

A number of years ago Drs. Fry, Bovée and Johnson reported cases in which the presence of fibroids so complicated delivery that the uterus, child and tumor had to be removed together. Such conditions would not exist if all fibroids were removed as soon as possible after their presence had been definitely determined. About a month ago he had a terrible experience with a fibroid which prevented delivery. The diagnosis was not made until after the birth of the placenta. The woman had been thirty-six hours in labor; the forceps was tried in vain; finally, the skull was perforated, and the fetus and placenta were delivered. It was then ascertained that the delivery of the shoulder had been prevented by the presence of a fibroid. Previous removal of the fibroid would have prevented all this. Fortunately, the woman recovered without mishap.

Dr. G. Brown Miller said that while he had had but little experience with degenerating fibroids as a cause of dystocia, a

physician of this city had told him of an interesting and unusual case, in which a fibroid was forced from its bed by the uterine contractions and was expelled with the fetus at time of labor. Fever after delivery, and symptoms of sepsis, and other manifestations, could often be accounted for by the presence of fibroids of the uterus. In many cases no adequate examination was made before labor came on, and the physician had no knowledge of the existence of fibroids until dystocia manifested itself.

Dr. Fry, in closing, in answer to Dr. Stone, said that the best treatment for a case in which a large fibroid was discovered during pregnancy was, in his opinion, to allow the pregnancy to go on to nearly full term, and then to do a laparotomy, open the uterus and remove the child, and then remove the uterus itself. This gave the patient the best chance. Otherwise the woman ran the risk of postpartum hemorrhage, interference with delivery, subsequent degeneration of the growth, etc. If operation was not performed, trouble was liable to recur at each succeeding pregnancy; hence the removal of the uterus as well as the child. The preceding was the line of treatment laid out in the case which he had reported, but labor came on too suddenly and proceeded too rapidly to allow of its being carried out. Sometimes the suffering on account of the tumors was so great that premature delivery became absolutely necessary. He had met with five such cases, and in each instance the patient did well.

MODERN IDEAS ON THE TREATMENT OF TUBERCULOSIS.*

By ROBERT REYBURN, A. M., M. D.,

Washington, D. C.

During 49 years of continuous medical practice the writer has seen many changes in the treatment of tuberculosis.

The modern treatment of tuberculosis chiefly consists in sunlight, pure air, cleanliness and abundant supply of nourishing food, and, in fact, in every means whereby we can improve the hygiene of our patients.

Treatment of Tuberculosis by Hypernutrition.—Every physician admits without question the propriety of giving tuberculous patients all the nourishing food that they can assimilate. While this is absolutely true, yet the writer must enter his protest against the method of treatment by hypernutrition; in other words, the giving of six, seven, eight and even nine meals per day of highly

* Read before the Medical Society of the District of Columbia, May 31, 1905.

nourishing food, chiefly milk and eggs. So much food is given that to consume it the patients are obliged to take purgatives daily or every second day to clean out the alimentary canal.

Now it should be remembered that food when in the stomach and even in the intestines is still outside the body. It does not form a part of the body until it has been acted upon by the secretions of the different glands of the stomach and intestinal canal and has been absorbed by the lacteals and forced into the torrent of the circulation. Then and then only does it nourish the body, for in the blood is the life.

It is a familiar fact that has passed into a proverb, that some persons consume large quantities of food and yet are not properly nourished. If at any stage of the digestive process the proper secretion is lacking or the lacteals do not properly absorb the nutriment, malnutrition will result.

Now it is a matter of very grave doubt whether we can properly nourish a patient by giving him large quantities of food and at the same time artificially stimulate the intestines to perform their functions. If we thus artificially hasten the passage of the food through the intestine, do we allow time enough for its proper absorption? It is the firm conviction of the writer that a liberal and nourishing diet, not requiring the use of purgatives, will nourish the patient equally as well, and even better than, such an excessive quantity of food requiring the constant use of purgatives.

There is also another very grave objection to giving such large quantities of food in consumptive cases, and this is the danger of producing auto-toxemia, or, in other words, self-poisoning.

The dangerous effects of the excessive use of nitrogenous food are well known to all physicians. It is generally admitted that a great number of the cases of diseases prevailing among adults and aged persons are due to the excessive use of meats and other highly nitrogenous foods. Another illustration of toxemia by excessive food supply is found in puerperal eclampsia.

The indisputable facts that puerperal eclampsia occurs most frequently in primapara and in young women in the prime of life, would seem to indicate clearly that it must be caused by a toxemia resulting from deficient metabolism and the retention of effete and waste products in the body. What is the cause of this toxemia? How can it be remedied? We are strongly convinced that the

cause is a very simple and obvious one, and that this disease is due to the nonassimilation of the large amount of meat and other nitrogenous foods consumed by the majority of pregnant women. After the initial stage of suffering from nausea and vomiting to which many women are subject during the early months of pregnancy has passed, the appetite is apt to become abnormally keen. Patients are encouraged to gratify this abnormal appetite by their friends, and even if the appetite should fail, they are urged to eat largely, it being a popular superstition that it is necessary for them to do so in order to properly nourish themselves and their unborn offspring.

Large Number of Patients Suffering from Tuberculosis.—We have probably in the United States today a half million of persons suffering from the various forms of tuberculosis. How and where shall they be treated and cared for?

Admitting the advantages of treating tuberculous patients in sanitariums and hospitals, yet the above statement shows the entire impossibility of treating this vast army of tuberculous patients in these institutions. Probably not more than five per cent. of these patients have the money or time to avail themselves of the benefits of consumptive hospitals or sanatoriums. Moreover, the consumptive father or mother may have children or relatives to support, and must, sick or well, provide for them.

Hospitals and sanatoriums for tuberculous patients are, of course, necessary and useful, but their usefulness is limited, and the energies of physicians should be chiefly directed to the treatment of the consumptive patients at their homes, where, perforce, 95 per cent. of them will have to remain.

Small Hospitals.—The writer believes that small hospitals and sanatoriums for tuberculous patients are much better than large, for the following reasons:

Pulmonary consumption, we know now, is a disease due simply to infection produced by the bacillus tuberculosis and germs of which are contained in the sputa of patients suffering from this disease. Tuberculosis, it is true, may be produced by these bacilli finding a lodgement in the intestinal canal and other portions of the body, but the number of such cases is comparatively insignificant. It stands to reason, therefore, that in an infective disease like tuberculosis we need isolation of these cases and not the aggregation of them in a large hospital.

The writer would go a step farther, and would say that he disbelieves in the treatment of large numbers of these cases in sanatoriums and hospitals, for many reasons.

The first of these is the depressing effect produced upon each other by the herding of such cases in one institution. I wish I could convey to my readers the pitiful tales of their experience that have been told me by the inmates of such institutions. Fancy this picture of one of the largest of these institutions located in the Adirondacks: The time is midwinter, the temperature hovering for weeks in the neighborhood of zero. The long porches along the sides of the buildings are filled with consumptives suffering from various stages of the disease. They are clothed in thick furs and wraps, sit in easy chairs for from six to eight hours per day, and amuse each other by expatiating upon their various symptoms and the manner in which they passed the previous night. Occasionally they exchange thermometers and vary the monotony by watching the falling snow flakes. One of these patients told me that during her six weeks' stay in the sanatorium, from December 1 to January 15, she only saw the sun twice. Of course, the conditions are made as favorable as possible for the patients by the able physicians who have charge of these institutions—and the writer has the most profound respect for the self-sacrificing labors of the physicians who have founded these sanatoriums and consumptive hospitals.

That the objection to the aggregating together in any community of a large number of cases of tuberculosis is well founded is shown by the experience of many countries in Europe.

In the Riviera (situated on the northwestern coast of Italy), in Switzerland, and also in the southern part of France, whither consumptives go in large numbers to pass the winter months, consumption is prevailing among the natives of the country to an extent formerly unknown.

In Colorado and other States located on the table land west of the Mississippi River, in our own country, the same conditions are found to prevail.

The multitude of "lungers," as they are called, who are becoming so largely an integral portion of the population of the States lying in the southwestern portion of our country, have proved a source of danger, and in many cases have spread the disease to the citizens of the localities they visit. In fact, in Colorado

it has been proposed to endeavor to prevent the coming of so many consumptives into the State by legal enactment.

The French medical men say that the most dangerous thing that can happen to a tuberculous patient is to be infected by a consumptive. In other words, they discern a marked difference between tuberculosis and consumption of the lungs.

On the treatment of tuberculosis by the administration of tuberculin it is sufficient to say that the hopes we all entertained of its curative power in this disease have been thus far disappointed. Even when administered in minute doses as a means of diagnosis it has seemed to me a dangerous remedy.

We now know that it is rare to find an adult of mature age, who has not had at some time of his life sustained an invasion more or less grave of the Great White Plague. The injection of tuberculin may arouse to renewed activity tubercular foci, which were dormant and in process of cure by the vital power of the system.

Primary tuberculosis, as has been stated by Dr. Ravenel, is a curative process. It is the attempt of the human body to protect itself from the tubercle bacilli and the toxins produced by them.

If secondary infection does not take place by pyogenic or other malignant micro organisms, the human body when placed in a good hygienic condition can and often does succeed in destroying them and rendering them harmless.

Dr. Kober said that he could add but little to Dr. Reyburn's presentation of the subject. He believed that too much emphasis had been placed on over-feeding and too little attention had been given to the matter of injudicious feeding. Eight or nine meals daily were too much for the consumptive patient, and an exclusive diet of milk and eggs was entirely wrong, as these articles did not contain sufficient quantities of fat and carbo-hydrates to make a well-balanced food ration. The daily quantity of proteids, carbo-hydrates and fats required by an average adult should be given to thin, anemic and debilitated patients in gradually increasing quantities. In the wasting diseases 115 to 120 gm. of proteid food daily was the rule. Fats should be increased judiciously and tentatively until the proper daily quantity for the particular patient was ascertained. The same was true of the carbohydrates. The food should also be properly cooked, temptingly served and so selected as to avoid a monotony in the diet.

He did not agree with Dr. Reyburn as to the complete failure of the tuberculin treatment; Dr. Kober's impression was that

Trudeau's results were from 6 to 10 per cent. better when it was used. He emphasized the great value of the open-air method of treatment. Locality had little weight, except for the following considerations: the air of the street, as a rule, was purer than that of the dwelling, and the air of the country was purer than that of the city or town; also, a location where the climate was as a rule sunshiny was preferable to one where dark or rainy days predominated. Aside from these factors, and the presence or absence of dust, climate was of little importance in the treatment of tuberculosis, the composition of the air at one place being about the same as that at another. The main requisites for success were a plentiful supply of fresh, pure air and a proper dietary. Tonics were also useful, as also were any other measures which tended to increase the power of resistance of the cells of the body. He deprecated the use of the ordinary nauseating cough mixture.

Dr. Sternberg said that he had listened to the reading of the paper with much interest. Dr. Reyburn had presented his subject in a very interesting way. Dr. Sternberg agreed with what Dr. Kober had said. As to a sanitorium being a source of danger to others in the community, Dr. Sternberg did not believe that there was any danger in this direction. It had been practically proven that even the nurses in sanatoria do not, except in the rarest cases, contract tuberculosis. On the other hand, the physicians who directed them were not infrequently men who had been cured of the disease and who have become specialists in that line. As regarded the treatment in cold climates, it did seem severe at first, but he had been informed by patients that after a time they enjoyed the cold and soon began to improve. There seemed to be something in the breathing of fresh, pure, cold air which stimulated the appetite and caused a rapid general improvement.

Tuberculosis was not, however, a disease which could be cured by climatic conditions alone. It had been said that were Trudeau anywhere else he would get equally good results. Sanatoria were being established all over the country around our cities, and they reported excellent results, especially in the incipient cases. The beneficial results were undoubtedly due mainly to the purity of the atmosphere, the diet and rest. Absolute rest was always insisted upon if there was any fever. Recently, in Virginia, physicians in many places had organized to establish sanatoria. Dr. Sternberg read a list of these. The same enthusiasm had spread to Maryland. But here in the District we had only the Washington Asylum Hospital to look after these cases; its work had been very creditable, but it was only one institution. The value of sanatorium treatment consisted not only in the air, diet, etc., but also in the education of the patients as to hygiene, prophylaxis, etc. Improvement in many patients was due alone to this education as to prophylaxis.

Dr. C. Norman Howard emphasized the value of hospital treat-

ment in tuberculosis among the poor. In the City Hospital of New York he had noticed that many of the patients, in whom the disease was not far advanced, improved. The improvement was largely due to the food, which was better cooked and in larger quantity than they had been accustomed to receive, cleanly surroundings and purer air.

Dr. F. B. Bishop said that he had always been impressed with the fact that the main essential in treatment was to relieve the atmospheric pressure on the chest walls so that with an increased lung capacity the patient could take up more oxygen than before. Increase anabolism, lessen katabolism, and maintain a balance so that nutrition improves. A high altitude tended to increase the lung capacity, and the beneficial effects which had resulted from treatment in such places as Colorado were undoubtedly largely due to this factor. The same results could also in a measure be brought about by the application of static electricity. Years ago he had studied this subject, and found it necessary to devise an especial form of apparatus, "the static cage," to produce the desired results. Of late, he had used the static canopy in addition to the cage; the patient was placed on an operating chair in a reclining position, and the canopy was lowered until he was as nearly as possible in the center of the electro-static field; he was made the positive pole, and the current was turned on; he was then encouraged to inhale deeply the air, which was lightened and filled with ozone. Dr. Bishop's experience with this method was very satisfactory in six cases; improvement resulted in each instance. They were all incipient cases, except one that he treated three years ago, a woman, whose case he thought at first to be hopeless. She had consulted specialists, and had been told that she must go to a high altitude as soon as possible. He gave her the same advice, which she did not take, but returned to him in about three months and insisted upon taking treatment. He gave her the treatment above mentioned, and she was a well woman today, and was employed in one of the Departments. Trudeau recently told her that the former cavity in her left lung had healed completely, and that whatever trouble she then had was only of a catarrhal nature. Dr. Bishop did not believe that treatment at the sea-level offered the same advantages as that at a high altitude, because the latter lessened the pressure within the chest, tended to produce deeper inhalations, and thus caused the patient to inhale a greater quantity of oxygen; besides at the sea-level many of the actinic rays of the solar system were absorbed by the denser atmosphere. This was particularly so with the ultraviolet rays, to which so much therapeutic value was attributed. Therefore, it was natural to conclude that the higher the altitude, the better for the patient.

Dr. Frank Leech emphasized the importance of early diagnosis. The great majority of these patients went untreated until their

condition was almost hopeless. It was a significant fact that Trudeau would not receive patients for treatment in his sanitarium after they had passed the incipient stage. This largely accounted for his success. Those who were unable to go away should immediately be placed under the most favorable conditions possible, and this should be done, if possible, before the bacilli were demonstrable in the sputum. He believed that the best course after having made a diagnosis was to let the patient know frankly just what his trouble was. Then he was able to help the physician by caring for himself.

Dr. Reyburn, in closing, thanked those who had entered into the discussion. Tuberculosis was today a burning question. When we considered that one-seventh of all deaths was caused by this disease we could but see that it was worthy of the deepest study. He was glad that the importance of early diagnosis and treatment had been emphasized. He enumerated the symptoms of incipient phthisis. He also mentioned the fact that according to the law of Charles cold air was more compact, and consequently contained more oxygen, than warm air, the law stating that gases and vapors contracted 1-273d of their volume for each centigrade degree that the temperature was lowered, pressure remaining the same. Hence the breathing of cold air was of distinct advantage to the consumptive, as it contained a maximum quantity of oxygen. In spite of this deduction, however, he had found as a matter of practical experience that better results could be obtained in a mild climate than in one which was very cold. In his opinion an institution for consumptives should consist of small buildings scattered over spacious grounds; thus a plentiful supply of fresh air was assured, expense was minimized and the patients were separated as far as possible. He commended the Washington Asylum Hospital, where this plan was carried out, although as yet on a small scale. Tents were not as good for patients as frame buildings, because they were not so permeable.

In Memoriam.

JOHN WOART BAYNE, M. D.*

Resolutions in Memory of John W. Bayne, M. D.

Whereas, it has pleased an inscrutable but all wise Providence to remove from our midst one of our beloved and honored fellow members; and

*Reported by the Committee and adopted by the Medical Society of the District of Columbia May 24, 1905.

WHEREAS, we are met together as a Society to do honor to his memory; therefore be it

Resolved, That in the death of our late associate, DR. JOHN W. BAYNE, we have lost a valued member, who, though not as constant an attendant as he wished to be, was always with us in all that upheld the honor and dignity of the profession he so much loved and which he creditably represented for more than thirty years.

DR. BAYNE'S spotless professional career, his love of virtue, goodness of heart and purity of intentions are well worthy of emulation.

Resolved, That by the death of our departed fellow member the community has lost a most useful and patriotic physician, the hospitals with which he was connected a wise counsellor and skilful surgeon, the College an able clinical teacher and his family a most affectionate husband and father.

Resolved, That these resolutions be spread upon our minutes and that a copy be sent to his bereaved family.

CHARLES W. RICHARDSON,
JOSEPH TABER JOHNSON,
GEORGE N. KOBER,
Committee.

Dr. Richardson said: The Medical Society is again called upon to mourn, as is so often the case with us, the passing away of one of its most active and earnest workers, while almost in the act of administering to the physical care and comfort of others. Dr. John Woart Bayne, to whose memory we pay honor, was born February 9, 1846, at the family homestead, known as "Salubria," in Prince George county, Maryland. He obtained his elementary education at the schools in the vicinity of his home. He attended medical lectures at the University of Maryland and was graduated from this institution in the year 1868, being then in his twenty-second year. His first official medical duties were those as an Acting Assistant Surgeon, U. S. A., detailed on duty at Fort Foote, Maryland. He received this appointment in 1870 and retained it until the fort was abandoned in 1878. In 1873 he was married to Miss Mae Ashby, of Alexandria, Virginia. With the abandonment of Fort Foote he was detailed for duty at the Washington Barracks, which caused his removal to Washington in the year 1878. He retained his position as Acting Assistant Surgeon until the year 1881. Within a short time after coming among us he was appointed one of the surgeons to the Police and

Fire Departments of the District, holding this position for some years. In 1881 he was appointed on the staff of Providence Hospital as a surgeon, and about the year 1889 was made President of the Medical Board of this hospital, which position he held at the time of his death. In 1883 he was appointed Professor of Clinical Surgery in Georgetown University. He was a member of the Consulting Board of the Episcopal Eye, Ear and Throat Hospital, and of the Eastern Dispensary and Casualty Hospital. During the late Spanish-American War he tendered his services to his country in that branch of the military service in which his energies would be of the greatest value to his country and countrymen, the Medical Corps. He was commissioned by President McKinley as Major and Brigade Surgeon, U. S. Army, and assigned to duty at Leiter Hospital, Chickamauga. He served throughout the war, receiving his honorable discharge several months after the declaration of peace. He immediately returned home and again became actively engaged with his civic professional duties.

Dr. Bayne was a member of the Masonic Fraternity and of the Sons of the American Revolution. He was extremely active in the latter organization. In 1902 he was elected vice-president of the local Society of the Sons of the American Revolution, and in 1903 was honored by the presidency of this organization. Unfortunately for us and the many to follow, Dr. Bayne never seemed to have the time to give his ripe and valued surgical experience to us in the form of writing. All the members of this Society know the subject of this paper so well, his endearing personal qualities, his gentle courtesy, his kindly manner and his steadfast friendship, that it is unnecessary for me to recount them. As a physician he was successful, for he possessed to the fullest degree those four requisites which it is essential for a physician to have in order to meet with success, viz : A strong moral character, good manners, studious habits and perseverance. His great professional pride was the Providence Hospital. During his term as President of the Medical Board many of the changes made in the improvement of the medical service were instituted, if not originated, by him. His great extra-professional hobby was the Society of the Sons of the American Revolution. In this organization he took great pride and pleasure and exerted himself in and out of season for its enlargement and betterment along all lines. He was a consistent, modest and steadfast Christian.

CHAS. H. A. KLEINSCHMIDT.*

WHEREAS, the Medical Society of the District of Columbia has learned with profound regret of the death of DR. C. H. A. KLEINSCHMIDT, a former President of the Society, and desires to place on record its regard for his memory, therefore—

Be it Resolved, That the Society hereby gives testimony to the high character of Dr. KLEINSCHMIDT as a physician, a citizen and a friend. For many years an officer of this Society, first as Recording Secretary and finally as President, he always labored for the advance of scientific medicine. We mourn the loss of his kindly counsel and encouragement.

Resolved, That a copy of these resolutions be sent to his family as a token of our sympathy in their bereavement.

FRANK BAKER,
G. LLOYD MAGRUDER,
SAMUEL S. ADAMS,
CLIFTON MAYFIELD,
LOUIS MACKALL, SR.,
Committee.

Dr. Kleinschmidt was born in 1839, at a little town called Petershagen, situated on the Weser, in Germany. He had the usual gymnasial course in Germany, came to this country when about 16 years of age, and retained to the end of his days traces of his German ancestry, both in a slight accent and in habits of mind. His education was first directed toward theology, but his aptitude for medicine and surgery was noted by Dr. Snyder of Georgetown, who persuaded his parents to put him under his instruction. He took a regular medical course at Georgetown University, graduating in 1862. The war between the States was then actively going on. Influence was offered to obtain him a position in the U. S. Army, but his sympathies were with the South, and he joined the Confederate Army, serving as Assistant Surgeon, first with the rank of Lieutenant, afterwards as Captain up to the close of the war. He was in most of the bloody conflicts in which the Army of Northern Virginia was engaged, notably at Gettysburg, with the rear guard during Lee's retreat; at the Wilderness and the terrible series of battles that followed, and

* Resolutions reported by the Committee and adopted by the Medical Society of the District of Columbia, May 24, 1905.

finally at Appomattox, after which he walked nearly all the way to Georgetown, arriving destitute of almost everything.

After this he went abroad and took a medical course at Berlin University. Returning, he entered active medical practice in Georgetown.

In 1876 he was appointed a Professor in the Georgetown University, and maintained his connection with it to the end of his life. In his professorial duties he was indefatigably active, reading omnivorously, carefully preparing his lectures and using every means to illustrate them by charts and drawings, upon which he spent much time and labor. He was a most excellent teacher, always upholding a high standard of medical education, always sympathetic and kindly towards those who wished to learn. He was a great favorite with his pupils, and was very successful in imparting his knowledge. Often severe and harsh in his manner, his rough exterior cloaked a kindly and most unselfish heart.

He held many offices of honor but very few of profit, for his mind was usually so absorbed in the higher walks of his profession that he did not always avail himself of the proper means of advancing his pecuniary interests. He was Recording Secretary of this Society for ten years, from 1871 to 1881, and President during 1886. He was the first President of the Board of Medical Examiners, elected at the time of its organization, in 1876, and was also President of the Board of Medical Supervisors. He was formerly a member of the Washington Academy of Sciences.

Dr. A. A. Snyder said : It is hardly appropriate for one with such a poor, stammering tongue as mine to speak on such an occasion, or for one so little fit to attempt to eulogize the memory of our comrade and fellow practitioner now gone ; but having through my whole life been closely allied to him by the nearness of our homes, by ties of personal friendship through many years of intimate professional intimacy, with an undercurrent of almost kinship or the sentiments of the clan, must be my excuse. The warm, affectionate attachment which he had for me was in a measure due to the high regard he had for my father, the late Dr. John M. Snyder, added to by the sentimental fact that he was taken into my father's office to begin the study of medicine, leaving the obscure little store to become the well-known professional man the very morning I was born ; and on my side the sentimental attachment was warmly returned.

Our old friend did not shine as he should in the profession and before the world, because of a constant shyness and innate mod-

esty, and because he was deeply dyed with the ethics of his profession, which prevented him from publishing his virtues from the house tops and his deeds as those of the mighty few. So quietly did he go upon the paths of his duties, without display or ostentation, without the egotistical "I" linked with the newspaper reporter, that but few fully realized the sterling worth the man possessed. He begged no applause and he made no play for the galleries. Many of his associates knew the man and his qualities, but the vast majority would always listen to his words in discussion or consultation, for there was knowledge behind them; only they little knew of the wonderful retentive memory and knowledge of the man, the skill of those slender hands, or that before them stood a veteran tried and proven in the trials of all the hell of war.

There are but few of those who smiled at his manner and gesture or some little eccentricity of his realized that to this man was due the touch of our caps—the red badge of courage has been his—the honor of a hero. Few know that, hardly yet a man, he, at the earliest opportunity, went South and entered the arduous service of the medical department of the Confederate States (and but few of us know the meaning of that service), and was assigned to service with the First Arkansas regiment Hood's brigade of Longstreet's corps. Do many members present realize what it meant to be a medical officer of that army? Always moving forward, forward; food, clothing, supplies and few medicines somewhere behind, but one must move forward, get what you can forward, and capture what you need forward; onward the corps goes, like a mixture of the locomotion of a horse with the endurance of a machine and the spirit of man. Little do we think that he was one of those who with his face to the wind forged onward through the mud, the slush and the snow, stopping under a tree to patch a man "fallen-out," with numb, cold hands and about nothing to patch with; then hurry onward again with the prospect of no food, and a sleep in the fence corner, under a cedar where the drizzle does not fall so straight and where two rails make a bed. Onward they go through the sand and dust of a hot summer day, the sun and sweat and dirt making a crust on their hair and skin and clothes as they hurry on, hoping for a broad stream of cool water in the next hollow; or the drizzle or rain of the spring day leaves them a swamp for the morrow; or the warm, mellow glow of the autumn day fades behind the hills, and they shiver that night as the black frost settles on the grass and leaves and makes the fence rails look like long silver bars.

All this is not the pomp of war with its glitter. Do many of us realize that our modest friend was doing a man's work at Fredericksburg; the days of the Wilderness fight with the nights in that swamp; Gettysburg—those July days! with the retreat, and crossing the Potomac; the body suffering with exhaustion and fatigue, with a mind crushed and humiliated by defeat; then the

service in the Valley; then in the mountains of East Tennessee; then South, finally before Petersburg; then the surrender and parole; finally landed in Baltimore, when a lady gave him two dollars, which landed him in Washington. There is little of the glory of war here. There was no charging steed, because horses were too few for junior medical officers, and ambulances were too often loaded with the suffering for a sound man to ride.

After all this came the heroism of the fight for a living in the up-hill contest of civil life; yet he won. Soon added to his daily duties came those of his classes, and his day's work was from 7 A. M. to 2 A. M., day and week and month and year. His manual dexterity in his surgical cases, and particularly in his obstetrical work, has now and often caused my highest admiration. His diagnostic abilities were excellent, never slipshod or guessing, but carefully made after an examination of the case and a reference to that storehouse of his memory which never forgot or displaced an item. His method was orderly and true. His treatment was never hesitating or obscure, but correct scientifically and physiologically, the drugs being selected because the indications required them, and their particular effects were needed, and it is needless to say that his results were good.

Some of us may imagine that Dr. Kleinschmidt had a sour and churlish disposition, not pleasant, affable or cordial; yet such was not the case. By strangers or those he did not admire he may not have been easy to approach, but otherwise he was a delightful companion. His knowledge of the literature of this country, England and Germany often startled me. His knowledge of music and his love for it is well known. His humor to me was always on tap and overflowing; and many of his laughable stories were so well told that I was left with the impression that I had seen them illustrated. His mannerism at times was crude, cold and abrupt; but if a man is worthy to have them they must be simply admitted, and no harm or feeling harbored.

One great virtue which he possessed was that of the strictest courtesy toward a fellow practitioner, and the following of the code. No man living has ever heard of this man ever doing anything but the honorable in his profession, no shady act to improve his own condition and no professional trickery or sham to injure or underestimate the standing of another: his cases came to him simply because of his own sterling ability. This regard for others all of us do not possess. His character was strong and ample, but he never allowed any action or thought of his to interfere with the rights of another. His likes and dislikes were plainly evident, but never discussed.

His last year or two of failing physically and mentally are so sad that we may believe that he thought with the noble Roman when he said—

> Night hangs upon mine eyes; my bones would rest,
> That have but labored to attain this hour.

DR. GEORGE PHILIP FENWICK.*

WHEREAS, DR. GEORGE PHILIP FENWICK, who died at his home in Washington, D. C., June 14, 1905, was a member of the Society for many years, be it—

Resolved, That the Society hereby expresses profound regret at the loss of so respected a member and faithful and successful practitioner of medicine.

Resolved, That we extend our sympathy and condolence to his family, and that a copy of this resolution be sent to them.

R. T. HOLDEN,
GEO. N. ACKER,
C. W. FRANZONI,
Committee.

Dr. Fenwick was born April 26, 1838, graduated in medicine at the Columbian University, Washington, D. C., March 3, 1859, and in the same year began practice in South Washington, where he continued to reside and work until compelled by failing health to retire from active life one year ago.

He enjoyed a large practice, and was much beloved and admired by his patients. The doctor was a man of very genial and friendly disposition, and consequently was popular among his fellow practitioners.

In 1866 he married Miss Mary Agnes Stewart, who survives him.

He served on the Board of Health from 1861 to 1871.

Besides the Medical Society, Dr. Fenwick was a member of the Medical Association and the Obstetrical and Gynecological Society.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, May 10, 1905.—Dr. T. N. McLaughlin, President, in the chair; over 68 members present.

An appropriation of $135.19 was made to meet expenses incurred in connection with the publication of the ANNALS.

The following cases and specimens were presented:

By Dr. John D. Thomas: Aneurism of the aorta. Patients presented. Discussed by Dr. Randolph.

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* Report and resolutions adopted by the Medical Society of the District of Columbia, July 3, 1905.

By Dr. Bovée: Pus tubes. See p. 243.

Dr. Ruffin read the paper of the evening. Subject: "Hodgkin's Disease; Study of a Case with Relapsing Fever." Discussed by Drs. Claytor, Wall, Carroll, Snyder, Kober, James F. Mitchell and Nichols.

Wednesday, May 17.—Dr. McLaughlin, President, in the chair; over 64 members present.

The Chair announced the death of Dr. John W. Bayne, and on motion appointed as a committee to take suitable action Drs. C. W. Richardson, Kober and J. Taber Johnson.

Dr. Richardson described the last illness of Dr. Bayne. He was first attacked with what appeared to be a mild follicular tonsillitis, which, however, caused little anxiety. Dr. Richardson was summoned at 10 o'clock that evening, and prescribed the usual treatment. The next day there was a little dysphagia and some inflammation of the epiglottis with considerable swelling. This caused more and more annoyance, and in the evening he was called and made many incisions, which greatly relieved the congestion and oedema. The patient passed a fairly comfortable night, and in the morning requested that the right side also be scarified. Examination, however, showed that the trouble was not due so much to the epiglottis as to the swelling of the right side of the throat, principally the mucous membrane of the entire right wing of the thyroid. The temperature was 102, and the fact that Dr. Bayne had had diabetes for several years made the prognosis especially grave. Scarification was performed on the right side, and the oedematous infiltration was thereby much relieved. On Monday at 1.30 or 2 o'clock Dr. Richardson found the breathing somewhat embarrassed, and there was much swelling of the aryteno-epiglottidean folds, for which numerous incisions were required. He called again at 5 and at 6.30, with Dr. Hyatt. The local condition appeared to be somewhat better, but the heart had become more rapid and feeble, and the general condition was worse. Last evening the swelling in the lower larynx was greater, not as an oedema, but as an infiltration. The swelling was so great that he could not make out the ordinary landmarks of the epiglottis or folds. The respirations numbered 38 or 40, and breathing was difficult, but there was no want of air. He was prepared to do a tracheotomy, but this was not required. The diabetic condition made itself more and more apparent by a gradually deepening coma. At 2 o'clock this morning he left Drs. Cuthbert and Marbury in charge. Dr. Bayne did fairly well during the night; his breathing was better and he took food. But at 6.30, when the physicians were out of the room for the moment, he raised himself up in bed and fell back dead.

The following cases and specimens were presented:

By Dr. Barrie: Bone cyst of lower jaw; resection and pros-

thetic appliance. Exhibition of patient and specimen. Discussed by Dr. J. Ford Thompson.

By Drs. Randolph and J. D. Thomas: Exhibition of two cases of transposition of the viscera, showing heredity. Discussed by Drs. S. S. Adams and Acker. See p. 239.

By Dr. Henry D. Fry: Hysterectomy for fibroids degenerating after childbirth. Discussed by Drs. I. S. Stone, J. Taber Johnson and G. Brown Miller. See p. 247.

Special Meeting, Wednesday, May 24.—Dr. McLaughlin, President, in the chair; over 47 members present.

Dr. C. W. Richardson, Chairman of the Memorial Committee upon the death of Dr. Bayne, read the report and resolutions of the committee, and they were adopted. See p. 257.

The Chair announced the death of Dr. C. H. A. Kleinschmidt, and appointed as a Memorial Committee, Drs. Frank Baker, Magruder, S. S. Adams, Mayfield and Louis Mackall.

Dr. Baker, Chairman, read a report and resolutions. Dr. A. A. Snyder made appropriate remarks. Dr. A. Behrend said that Dr. Kleinschmidt was well known, not only in this Society, but also throughout the whole United States. He held the office of Librarian of the American Medical Association, which gave him almost a national reputation.

The resolutions were then adopted. See p. 260.

The special session then adjourned, and the regular meeting was held.

A letter was read from the Secretary of the American Association of State Medical Journals asking that this Society appoint a delegate to the second annual meeting of the Association, to be held at Portland, Oregon, July 11, 1905. Dr. Kober was accordingly designated to represent the Society.

Dr. J. Ford Thompson presented cases with specimen: Excision of the hip joint for hip disease. Discussed by Drs. Balloch, Neff, Reyburn and A. Behrend. See p. 244.

Dr. Nichols read the paper of the evening. Subject, "Protozoa in the Stomach, and their Diagnostic Significance." Discussed by Dr. G. Wythe Cook.

Dr. Acker stated that he had in his possession the old book of the Board of Examiners, belonging to the Society. He inquired to whom he should deliver it, and was instructed to turn it over to the Librarian of the Society for safe keeping.

Wednesday, May 31.—Dr. McLaughlin, President, in the chair; over 37 members present.

The Treasurer was given authority to make the usual necessary expenditures during the Summer recess of the Society, and the Recording Secretary was given authority to have the official typewritten transactions for the year 1904 bound.

Dr. D. S. Lamb presented a specimen of hemorrhagic pancreatitis to illustrate a new method of mounting, which was especially useful in the classroom, or wherever specimens were to be passed around from one person to another.

Dr. Bovée presented a case of unusually large ureteral calculus: Transperitoneal uretero-lithotomy. See p. 233.

Dr. Reyburn read the paper of the evening. Subject: "Some Modern Ideas on the Treatment of Tuberculosis." Discussed by Drs. Kober, Sternberg, C. Norman Howard, F. B. Bishop and Frank Leech. See p. 250.

The Society then adjourned *sine die* for the first session of 1905.

Stated Meeting, Monday, July 3.—The President, Dr. McLaughlin, in the chair; fourteen members present. In the absence of Secretary Morgan, Dr. Motter acted as Secretary.

The following nominations for active membership were read and referred to the Board of Censors:

Mahlon Ashford, Georgetown University, 1904;

William G. Erving, Johns Hopkins University, 1902;

William H. Hough, Georgetown University, 1904;

H. R. Hummer, Georgetown University, 1899;

B. Rush Logie, University Maryland, 1890;

Francis A. Schneider, College Physicians and Surgeons, New York, 1901;

F. Fremont Smith, University Pennsylvania, 1883.

Drs. W. W. Keen and John H. Musser, of Philadelphia, were elected honorary members. The nomination of Dr. E. B. Dench was withdrawn.

The Treasurer made his semi-annual report, showing a balance on hand of $1,576.88.

Dr. Holden, from the committee on the death of Dr. Fenwick, made a report, which was adopted. See p. 264.

A communication from the Game Warden, Richard Sylvester, was read, and, together with the accompanying Senate Document No. 181, in regard to the "Pollution of Potomac River," referred to the Executive Committee.

It was ordered that when the Society adjourned it adjourn to meet on the first Wednesday in October.

An appropriation of $6.65, for postage for the Editorial Committee, was made.

WASHINGTON MEDICAL ANNALS.

Journal of the Medical Society of the District of Columbia.

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EDITORIAL COMMITTEE.

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Walter A. Wells, M. D., ... "The Rochambeau."
Murray Galt Motter, A. M., M. D., . . 1815 Belmont Avenue.

Editorial.

EIGHTH DECENNIAL REVISION OF THE UNITED STATES PHARMACOPOEIA.

The number of physicians who know little, and seemingly care less, about the "Pharmacopoeia of the United States of America" is really astonishing. Many have not seen it, and more scarcely know the differences between the pharmacopoeia and the dispensatories. That the pharmacopoeia was originally and exclusively a doctor's book, and is now frequently referred to as "only a druggist's book," are matters of past history and present experience.

The United States is, so far as we know, the only national government which does not control, prepare and issue its pharmacopoeia; and yet, that the United States Pharmacopoeia is yearly growing in authority is a fact easily demonstrable from the laws of the several States with reference to the practice of pharmacy and the sale of drugs. More than this, the need of some authoritative description of the drugs and their preparations, which are in daily use by the profession, is emphasized by the fact that these laws, while recognizing the U. S. Pharmacopoeia as the standard for all drugs mentioned therein, recognize also the authority of other pharmacopoeias.

As has been very clearly though somewhat sarcastically pointed out (Wood, H. C., *Pop. Science Monthly*, Jan., 1905), the pharmacopoeia endeavors to provide, in a pure state and somewhat definite strength, those standard drugs which the profession throughout the country prescribes. Not all of them, by any means, for the profession has, perhaps, been more diligent in seeking after

some new thing than in perfecting the old, has followed too much the devices and desires of the manufacturer. When we consider, for instance, that antipyrine masquerades under a dozen different names, the futility of trusting the advertising matter with which we are so liberally circularized, is manifest. Again, hexamethylenamine has numerous aliases and a score or more of allied compounds and derivatives; in all of these it is probably but one and the same chemical group which is therapeutically effective. The vogue of these fancifully named compounds, of uncertain origin and still more uncertain efficacy, is brief, yet the shelves of the apothecary groan therewith.

A closer adherence to pharmacopoeial preparations will promote a better and a surer therapeusis. We shall find here a goodly number of the newer synthetics, which have established their value, and some reproductions of proprietaries which might better, perhaps, have been left for the National Formulary.

It is gratifying to learn that *Adeps* is now prepared from the abdominal fat of the plain, ordinary, everyday hog, instead of from that of the wild boar, as heretofore. In some cases brevity is secured only at the expense of "English undefyled," but, on the whole, the book reflects great credit upon the unselfish and painstaking work of the Revision Committee. Typographically it is particularly noteworthy—one seldom sees a book in which the chemical formulae are so clear and legible; and the use of several different kinds of type makes reference easy and rapid. Those who have occasion to refer to the book frequently will do well to secure it in flexible binding, which is both more durable and more comfortable in the use. Nothing is so exasperating as, when in the midst of compounding a prescription, with graduate in one hand and stockbottle in the other, to have the book shut up like a clasp-knife before you.

The medical profession, as well as the pharmaceutical, will do well to study carefully those preparations the strength of which has been changed, for herein lies possible danger to the patient. The United States Pharmacopoeia is, we believe, the first to adopt the recommendations of the Brussels Conference of 1902 (Conférence Internationale pour l'Unification de la Formule des Médicaments Héroïques). In the words of the Preface: "The purpose of this body was to endeavor to formulate standards for potent remedies which would be adopted by the various pharma-

copoeias of the world, and thus there would be secured the principal object of an international pharmacopoeia. * * * The adoption of the uniform strength of 10 per cent. for the tinctures of potent drugs has compelled the alteration in strength of many of the tinctures of the Pharmacopoeia of 1890." Thus, tincture of aconite is reduced from 35 to 10 per cent., tincture of veratrum from 40 to 10 per cent. On the other hand, tincture of strophanthus has been raised from 5 to 10 per cent. In all, there are about twenty-two pharmacopoeial preparations the strength of which has been increased and thirty-five in which the strength has been decreased. Of even greater interest, to those who look forward to a possible day of more accurate and scientific therapy, there are fifty preparations which will, for the first time, have a definite, standard strength. An account of these changes and of the additions to the pharmacopoeia may be found in Bulletin No. 23, Hygienic Laboratory, U. S. Public Health and Marine Hospital Service, copies of which may be obtained upon application to the Surgeon General. M. G. M.

Medical Miscellany.

Memorandum showing the relative prevalence of certain communicable diseases from June 1, 1904, to July 1, 1904, and the same period of 1905.

DIPHTHERIA.

1904.			1905.		
Cases on hand June 1, 1904..	11		Cases on hand June 1, 1905..	10	
Cases reported from June 1, to July 1, 1904.....	19		Cases reported from June 1, to July 1, 1905.....	15	
Cases discharged, recoveries		13	Cases discharged, recoveries		17
Cases discharged, deaths.....		4	Cases discharged, deaths.....		.....
*Per cent. of fatal cases.....		13.33	*Per cent. of fatal cases.....		.....
Cases on hand July 1, 1904..		13	Cases on hand July 1, 1905...		8
Total cases..	30	30	Total cases.....	25	25

SCARLET FEVER.

1904.			1905.		
Cases on hand June 1, 1904 ..	21		Cases on hand June 1, 1905..	41	
Cases reported from June 1, to July 1, 1904.....	19		Cases reported from June 1, to July 1, 1905.....	22	
Cases discharged, recoveries, ...		22	Cases discharged, recoveries		36
Cases discharged, deaths.....		.....	Cases discharged, deaths.....		3
*Per cent. of fatal cases.....		.....	*Per cent. of fatal cases.....		4.76
Cases on hand July 1, 1904...		18	Cases on hand July 1, 1905..		24
Total cases.....	40	40	Total cases.....	63	63

TYPHOID FEVER.

1904.			1905.		
Cases on hand June 1, 1904..	31		Cases on hand June 1, 1905..	30	
Cases reported from June 1, to July 1, 1904.....	41		Cases reported from June 1. to July 1, 1905.....	40	
Cases discharged, recoveries, ...		20	Cases discharged, recoveries		36
Cases discharged, deaths.....		7	Cases discharged, deaths.....		3
*Per cent. of fatal cases.....		9.72	*Per cent. of fatal cases.....		4.29
Cases on hand July 1, 1904...		45	Cases on hand July 1, 1905...		31
Total cases.....	72	72	Total cases.....	70	70

SMALLPOX.

1904.			1905.		
Cases on hand June 1, 1904..	5		Cases on hand June 1, 1905..	15	
Cases reported from June 1, to July 1, 1904.....	2		Cases reported from June 1, to July 1, 1905.....	2	
Cases discharged, recoveries, ...		7	Cases discharged, recoveries		13
Cases discharged, deaths.....		.....	Cases discharged, deaths.....		.....
*Per cent. of fatal cases.....		.....	*Per cent. of fatal cases.....		.....
Cases on hand July 1, 1904...		.....	Cases on hand July 1, 1905...		4
Total cases.....	7	7	Total cases.....	17	17

*The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

W. C. WOODWARD.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY, SIXTEENTH SESSION, MAY 30, JUNE 1, 1904, DETROIT, MICHIGAN. VOL. XVI.

The "Transactions" contains a number of highly instructive articles. The Presidential address of Dr. Augustus Caillé deals with the broadest duties of the pediatrician. His remarks upon school problems are of the greatest interest to the teachers of our schools as well as to medical men. He lays much stress upon the benefits to be derived from medical inspection of schools other than the detection and prevention of contagious diseases, such as detection of unsanitary surroundings, backward and neurotic children, mouth breathers, faulty positions at desks, too great mental work on those not capable physically of standing it, defects of the special senses. He has a good word to say for the school baths, and is very much in favor of "less brain gymnastics and more fresh air and exercise" for our children.

Dr. L. E. Holt reports a most interesting series of cases of constipation, convulsions and acute digestive disturbances, although a marked increase in weight, from the use of too high fat percentages in feeding.

Dr. J. L. Morse, in an analysis of 118 cases of lobar pneumonia in infancy, emphasizes the greater frequency of this form of pneumonia in infants than is accepted, and also cautions against what he believes a too great tendency to minimize the fear of a fatal ending in children under two years of age. In the discussion he mentions the interesting point that some of the cases had been sent in with the diagnosis of some abdominal lesion.

Dr. B. K. Rachford gives a very timely paper on "Gastro-intestinal Toxemia," in which he lays stress on the conditions which chronic intestinal intoxications may produce in children; the presence of indican in the urine in large or continuous amounts being a valuable sign.

The question of the efficacy of decapsulation of the kidney was brought up by Dr. Caillé in reporting a case of chronic nephritis—large white kidney—in a child four and a half years old, operated upon by Dr. Edebohls with excellent clinical results.

J. D. THOMAS.

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WASHINGTON MEDICAL ANNALS

COLLES' FRACTURE.

By EDWARD A. BALLOCH, A. M., M. D.,

Washington, D. C.

One of the most common of fractures is the one at the lower end of the radius, which goes by the name of the eminent Dublin surgeon. Apparently a simple fracture of a long bone and one not difficult to diagnose or treat, it must be confessed that the end results in many cases are deplorable and not at all what they should be from the standpoint either of the patient or the surgeon. Any surgeon of experience can call to mind instances where the usefulness of the hand and wrist was impaired to a serious degree by stiffness of the joint or tendons and inability to use the hand. As this fracture is one which many members of the profession at large feel themselves competent to manage without special surgical aid it is fitting that they should be fully aware of the large measure of responsibility that devolves upon him who undertakes the care of one of these cases, and he should be fully awake to the bad results which may follow improper or injudicious treatment. It is the purpose of this paper to inquire into the nature of the unsatisfactory results which may attend the treatment of this fracture and to try to point out the reasons therefor, with a view to ascertaining what is necessary to be done in order to secure a proper union of the bone with a minimum of discomfort and deformity.

It is a first essential to the proper treatment of these cases that the structure of the parts involved be thoroughly understood, and a summary of their anatomy will serve to render more intelligible what will be said as to diagnosis and management.

The lower end of the radius expands rather abruptly in order to form a surface for articulation with the scaphoid, and semilunar bones, which are received into facets on its distal end. This makes a weak spot at the point where the expansion

begins, namely at about the lower inch of the radius. Then again in this locality the cancellous structure of the bone is remarkably porous and the compact portion very thin, often, indeed, a mere shell. This peculiarity of structure becomes more marked as age advances, and it is accordingly in older persons that we meet with this form of fracture most frequently. The motion in the wrist joint is between the distal end of the radius and the proximal row of carpal bones. There is some motion between the two rows of carpal bones and a slight gliding motion between the carpal and metacarpal bones, and in the thumb. The effect of this is that the metacarpals and the distal row of carpal bones form a nearly solid mass, acting as one bone and transmitting any impulse directly to the proximal carpal bones and the lower end of the radius.

Important also is the anterior radio-carpal ligament, which starts from the styloid process and anterior carpal margin of the radius and spreads out fanwise to the scaphoid, semilunar, cuneiform and os magnum. This is a strong and resisting ligament and serves greatly to strengthen the wrist joint.

Mechanism of the Fracture.—In most instances this fracture is produced by a fall on the outstretched hand. In falling, the individual instinctively throws the hand into extension in order to save himself, and thus the full impact of the fall comes upon the posterior surface of the lower end of the radius. The carpal bones, being locked and nearly rigid, as has been shown, act as a solid mass and are driven as one bone against the distal end of the radius, the greatest stress coming upon the weak point where the bone begins to expand. Other factors in the problem are the weight of the body and the velocity acquired in the sudden fall. Thus we have as elements in the causation of this fracture, the resistance of the ground, the body weight and the velocity. All these combine to bring the maximum point of strain at the lower end of the radius.

The direction of the fracture is determined by the strong anterior radio-carpal ligament. It stretches up to the limit of its elasticity and then begins to pull on the lower end of the radius. It then becomes a contest of strength between the bone and the ligament, and the ligament being the stronger of the two the bone breaks instead of the ligament tearing. The fracture, therefore, may be said to be caused by pressure on the bone, combined with

traction by the strong anterior radio-carpal ligament. The effect of this is to cause the carpal end of the radius to be displaced backward and to cause impaction of the fragments. In falling, the patient unconsciously pronates the hand. The degree of pronation at the moment of impact determines the amount of outward displacement of the lower fragment. In falls on the dorsum of the hand the process is reversed and the carpal fragment is displaced anteriorly. This is the reversed fracture of Roberts.

We are now in a position to inquire more intelligently into the particular causes underlying the unsatisfactory results which sometimes follow this fracture. For the purpose of studying them more carefully they may be classified under three general heads: 1. Errors in diagnosis; 2. Errors in reduction; 3. Errors in management after reduction.

Errors in Diagnosis.—The diagnosis of a typical Colles' fracture offers no special difficulties. One can detect it almost at a glance. The history of the case and the characteristic deformity make apparent what has taken place. Unfortunately, all cases are not typical, and there is a large number where the diagnosis is more or less in doubt. Cases with little or no deformity and with great swelling have been in the past and are even yet treated as sprains or contusions of the wrist, to the ultimate detriment of the functions of the hand and wrist. Among the conditions which may be confounded with Colles' fracture are sprain and dislocation and contusion of the wrist, and it may be profitable to consider the differential diagnosis of these conditions. Since the *x*-ray has come into common use the diagnosis of sprain of the wrist is made much less frequently than before. This valuable agent has revealed to us the fact that there is in most cases miscalled "sprain" of the wrist, some lesion of bone, notably fracture of the carpal scaphoid, as the true cause of the condition.

It should be with extreme caution that the diagnosis of sprain is made, and then only after careful exclusion of all other conditions. In other words, a suspicious case should be considered as a fracture until proved to be otherwise. The *x*-ray is invaluable in these obscure cases and is the best means at our disposal for clearing them up. Another valuable sign is pressure pain at the seat of fracture. In cases where no deformity can be made out, pressure along the lower end of the radius with the tip of the finger, the end of a lead pencil or a clinical thermometer will de-

velop a point of maximum pain within an inch of the lower end of the bone. The pain is greatest at the point of fracture. This localized pain is almost pathognomonic. It can be brought out even in the presence of marked swelling.

Backward dislocation of the carpal bones is of rare occurrence. It gives a deformity somewhat like Colles' fracture, but in dislocation there is no alteration in the relative position of the styloids, while in fracture the radial styloid is higher than normal, owing to displacement caused by the fracture. The edge of the carpal bones may be felt like a ridge across the back of the wrist. The *x*-ray is also of value.

In contusion of the wrist there is no deformity. The radius can be palpated over the suspicious area and will be found to be smooth and even. The styloids have their normal relative positions. There will be a history of a direct blow upon the wrist. The *x*-ray will show unbroken bone. The characteristic deformity of Colles' fracture will be lacking.

Errors in Reduction.—The aim of all methods of reduction is to return the ends of the broken bone to their normal positions. Theoretically this should be easy ; practically it is hard. I should say that the greatest single mistake made in the reduction of this fracture is to underestimate the amount of force required to break up the impaction. A simple fracture of the radius, caused by a direct blow on the bone, is one of the easiest fractures to reduce and manage. The reason for this is that the fracture is transverse, and that in the absence of impaction the ends of the bone go readily into position. It is the impaction, therefore, that makes Colles' fracture differ from other fractures in this locality. Reverting for a moment to the mechanism of this fracture, let us recall the factors in its production. They were stated to be the resistance of the ground, the body weight and the velocity. It is the impact and the resulting pressure which cause the fracture, and the impact is directly upon the end of the radius. To get a clearer idea of the amount of pressure to which the bone is subjected let us take a concrete example. We will assume that a man weighing 150 pounds gets a sudden fall on his outstretched hand. The hand travels, we will say, a distance of four feet at the rate of twenty feet per second, and is suddenly arrested. According to the principles of physics the pressure at the point of arrest would be about 153 pounds. It is not meant that the bones

are actually driven into each other with this amount of force, because some of it is expended before the bone breaks, but the end of the upper fragment is driven solidly into the lower. It is manifest that two bones driven against each other with this amount of force cannot be separated without the application of a degree of force commensurate with that which caused the fracture. Once this impaction is released and the fragments made to move freely on each other, the reduction and approximation are made almost as easily as if the fracture were a simple transverse one. The amount of force necessary to release the impaction is so great that an anesthetic should always be given. In fact, I think that it should be the rule never to attempt to reduce this fracture without the use of this agent. One should never be content until the impaction is thoroughly broken up and the ends of the fragments felt to be free and clear, thus converting an impacted into a simple fracture and making its subsequent management comparatively easy.

There are several methods of accomplishing this, but all tend to the same end, so that the method of reduction is comparatively unimportant, provided always that the impaction is broken up. My own practice is to use first hyperextension, followed by flexion and abduction, combined with extension. An assistant, if available, is of great use in making extension and counterextension while the surgeon makes the manipulations necessary to release the fragments. The process of reduction may be tested by grasping the lower fragment with the thumb and fingers of one hand while the other hand steadies the upper fragment. In this way the range of movement can be estimated from time to time until we are satisfied that no impaction remains. In leaving this part of the subject let me again emphasize the fact that impaction of the fragments is the greatest drawback to successful reduction, and that, in many cases, a great amount of force is necessary to release it, but that we should never be satisfied without the complete freeing of both ends of the broken bone.

Errors in Management After Reduction.—I have never found any special make or shape of splint to be necessary to the proper and satisfactory retention of this fracture. Perfectly good results may be secured with simple anterior and posterior splints, provided always that the reduction has been thorough and the approximation good. Indeed, Roberts goes so far as to say that a

band of adhesive plaster around the lower end of the forearm is all sufficient. Most surgeons, I fancy, lack confidence in a patient's ability to keep out of trouble without some form of apparatus more secure than this. In my judgment no apparatus should be applied which inhibits the full and free use of the fingers from the outset. When the radius is broken in this situation there is considerable laceration of tissue, and the resulting effusion, together with the callus necessary to repair the fractured bone, tends to bind the tendons in a mass of adhesions. This should be prevented at any cost, as it is the prime cause of the stiffness which so often follows this form of fracture. No splint should reach further than the heads of the metacarpals. This gives play to the flexor tendons and prevents them from becoming immobilized. It in no way interferes with the healing of the break. If the reduction has been good there need be no fear of the ends of the bones getting misplaced. Again, too, the more perfect the reduction and approximation of the fragments, the less the amount of callus needed for repair. The anterior splint should be cut out so as to accommodate the thumb, and both it and the posterior splint should be padded so as to produce an equable compression.

The fracture should be inspected frequently during the first week or ten days. For this reason my preference is for splints which are easily removable. My objection to the gypsum splint in these cases is that it does not permit of this free inspection, so necessary in these cases. This objection does not hold if the plaster cast be split soon after it is applied. My experience, however, is that if the part is comfortable after a cast has been applied we are prone to let well enough alone, and to leave the unbroken cast on the part until the going down of the swelling demands its readjustment, when it may be too late to correct deformity or prevent stiffness.

The fracture, then, should be inspected frequently, and the splints readjusted to suit the varying tension of the soft parts. This plan has another advantage in that it gives the surgeon a chance to apply massage to the parts. This I consider one of the most important factors, if not the most essential, in securing a good result in these cases. I favor its early use. An expert operator is not necessary. At least as soon as the end of the first week the surgeon may begin gentle stroking with the finger tips from the hand toward the wrist. At each subsequent visit the strength

of the pressure may be increased. At the end of the second week the parts will stand a quite vigorous massage. At this time the wrist may be subjected to gentle passive motion, the seat of the fracture being protected by grasping it rather tightly.

In a young person the fracture will be well healed at the end of the third week. In older individuals it is well to give an additional week before considering the healing to be good. In an ideal patient all retentive appliances might be removed at this time and the wrist carried in a sling. However, as patients are careless, and as they are sure to blame the surgeon for the results of their own imprudence, I prefer to keep a light posterior splint on the parts until the end of the fifth week. It is to be understood that massage and passive motion are to be kept up during this time. Alternating hot and cold douches with subsequent friction tend to limit effusion and to hasten its absorption when formed. At the end of the sixth week the patient may begin to use the hand and wrist in the ordinary avocations of life, avoiding anything which would put an extraordinary strain on the joint.

Summing up the whole matter, it may be said that the secrets of success in the treatment of Colles' fracture are a correct diagnosis, a correct estimation of the difficulties attending reduction, and, finally, constant care and watchfulness in the after treatment, and the early use of massage and passive motion.

Since the above was written I have read with great interest the thoughtful address of Dr. Maurice H. Richardson, at the last meeting of the American Medical Association. In this address, among other things, he gives expression to a thought which has occurred to me more than once. This is that as the domain of surgery is now so broad, no one man can hope to cover it all.

This being so, it is fitting that fractures should be in the hands of a class of men well qualified by their training to make and adjust apparatus dextrously and skilfully. Richardson thinks that we have, in the orthopedic surgeons, men who fill these requirements in an ideal manner. I heartily agree with him.

The daily work of the orthopedists is almost entirely the fitting and adjustment of appliances to diseased bones and joints, and they are especially skilled in the use of plaster of Paris.

I see no reason why they should not be able to treat fractures with a degree of skill which the ordinary surgeon, unless his ex-

perience has been much larger than is generally the case, cannot hope to attain.

This suggestion of the distinguished Boston surgeon is entitled to our earnest consideration.

Dr. J. Ford Thompson said that he had come to the meeting especially to hear Dr. Balloch's paper. Dr. Thompson had been interested in Colles' fracture for many years; indeed there was no subject in surgery of greater interest, and there was no surgical condition from which he had seen such unsatisfactory results as from this injury. The only criticism of the essay he would make was that Dr. Balloch seemed to think that all cases of this fracture were alike and that equally good and satisfactory results could be obtained in all cases under good management. On the contrary, there was no fracture which presented more different phases. These fractures were by no means always impacted; very many were impacted to some extent, but after a little manipulation satisfactory crepitus could be obtained. Other cases required the use of an anesthetic and the application of much force before the fragments were satisfactorily released. He agreed thoroughly with the essayist in the importance of freely breaking up impaction and of getting good apposition of the broken ends. In regard to the deformity, its production by the overriding of the fragments was uncommon; it was nearly always due to tilting of the lower fragment. Impaction also was often due to this cause.

The *treatment* of Colles' fracture was the important consideration. Unsatisfactory results were sometimes obtained at the hands of the best surgeons, but such results were due to the complications which were so frequent. Comminution of the lower fragment; fracture of the styloid process or its ligament; of the scaphoid, of the semilunar; ligamentous tears; all these were often met with and added much to the difficulties of treatment. The trouble arising from epiphyseal separation and its attendant deformity ought to be considered.

Thorough reduction was of the first importance, but it was by no means always accomplished. Frequently splints or a cast were put on while some deformity persisted, and invariably with bad results.

The treatment was extremely simple. The elaborate apparatus formerly described in the text-books were not mentioned in the works of today. He did not agree with Roberts that the use of a band of adhesive plaster was sufficient treatment after thorough reduction, and he always took with him to these cases, splints, cotton, adhesive plaster and a bandage. An ordinary cigar-box top made a good splint of about the proper length. He simply split the cigar-box top to a convenient width and with the cotton

and bandage in a few moments made a padded splint, or two, if necessary. One dorsal splint was usually sufficient. The method was as old as the time of Frank Hamilton, and there had been nothing better since. Massage was most important and it should be begun early. Since he had been using massage, he had had no case of stiffness following Colles' fracture; if it was skilfully used, the patient should always have a perfect result after the fifth or sixth week. He said that every spring, in March and April, patients came to him complaining of stiff hands. Every case gave a history of Colles' fracture which had been treated with splints which extended too far on the hand, which had been left on too long, and which had not been removed for inspection of the parts until long after mischief had been done. After the fracture there was agglutination of the part by effusions, no massage or passive motion was employed to break it up, and thus many hands were destroyed. Dr. Thompson spoke of the deformity caused by prominence of the ulnar styloid, and said that this it was impossible to avoid. It was probably due to relaxation of the ligaments at the inferior radio-ulnar articulation. He said that Colles' fractures were sometimes compound, and that this class of cases presented the greatest difficulties. It was sometimes necessary to reduce them by open operation. He related the case of a boy who had fallen from a second-story window, receiving a fracture of the radius a trifle too high for a typical Colles'. Dr. Thompson gave an anesthetic and reduced the fracture, applying a plaster dressing. On the second day he became dissatisfied with the conditions and examined the arm with the *x*-ray. He found considerable displacement, and, under anesthesia, he attempted reduction a second time. The *x*-ray showed that there was still no apposition. He proposed open operation, but the consulting surgeon disagreed. The boy later went to Johns Hopkins, where he was again examined under anesthesia, but no operation was undertaken, and the boy now has a permanent deformity and a crippled hand.

He related the case of a boy whom he treated by open operation at the University Hospital. The condition was an irreducible compound Colles' fracture, and the result was most satisfactory. He said that the treatment recommended by Dr. Balloch would not meet all cases, and that a wider classification of varieties of this fracture than Dr. Balloch had given was necessary. In old persons stiffness is a very common sequel and one that can hardly be avoided. After the first or second day, the splints should be removed and massage and passive motion practiced, protecting the fragments with the opposite hand. With this treatment recovery should be complete in five or six weeks with no stiffness. The splints may be discarded in three or four weeks.

He said that the plaster of Paris dressing was often excellent, and at times was the only appliance that could be worn with com-

fort. In complicated cases he often dressed the part in plaster of Paris and removed it for examination at the end of one week. Massage had been much neglected in this country in the management of fractures. Championnière, who has done such brilliant work in fractures, uses little more than Roberts' adhesive plaster dressing in Colles' fracture, but practices massage early and persistently. He treats every variety of fracture with massage. Dr. Thompson believed that bad results would seldom follow if massage were more used. He said that during the manipulations in the after treatment of fractures any displacement was likely to be detected and reduced. He did not think that specialists were needed for the treatment of Colles' fracture ; any general surgeon ought to be capable of giving it the best care.

Dr. W. C. Borden, U. S. Army, said that he agreed with Dr. Thompson in the opinion that these cases were not always easy to treat and that they were not always impacted. Very many cases were comminuted, and fracture of the styloid was more frequent than was generally suspected. Surgeons often thought the fracture was reduced when as a matter of fact it was not. It was often most difficult to reduce a Colles' fracture. He wished to speak of the importance of the *x*-ray examination, both before and after an attempt at reduction ; by this means only could the surgeon be sure that reduction was complete. In his own cases he had often been deceived, and had found his tactile impressions reversed by the *x*-ray picture. In one case of Colles' fracture, almost typical and received by a fall from a height, reduction proved impossible. With another surgeon, he attempted to reduce it under an anesthesia. There had been some improvement, but the *x*-ray showed that apposition had not been secured. An open operation was done, and still much force was needed to bring the fragments into line. He agreed with the essayist and with Dr. Thompson as to the after treatment. He insisted upon a short splint, with early passive motion and massage. Neglect of these measures ended disastrously in most cases. In certain instances he thought that bad results were not entirely due to bad treatment, but to incomplete reduction ; for this reason he urged the *x*-ray examination, both before and after reduction was attempted.

Dr. Jas. F. Mitchell said that he had nothing much to add to what had been said. He appreciated Dr. Borden's warning to always make use of the *x*-ray. He thought that Colles' fracture ought not to be treated by the general practitioner. Anesthesia should invariably be used ; he nearly always had cause to regret an attempt to treat Colles' fracture without anesthesia. Complicated cases were, of course, more difficult to manage, and they usually came to the surgeon ; but in any case, he said, the physician should be sure to use anesthesia, to be sure of complete reduction and release of impaction, and, that accomplished, any

kind of splint could be used. The choice depended upon individual preference. He always used plaster. Its great advantage lay in the early motion of the fingers and hand which could be secured. When put on with plenty of cotton pads and the dressing cut down on the sides, the fingers and hand were free and motion began early. The patient should be instructed to use the hand as much as possible, and with a light cast, writing and eating may be accomplished almost from the beginning. Stiffness will thus be avoided.

Dr. Neff complimented the essayist on the presentation of a model paper, being concise, comprehensive, and on a practical subject. Success in the treatment of Colles' fracture depends upon prompt recognition, immediate reduction and early massage. He agreed that anesthesia was nearly always necessary and that the *x*-ray was a most valuable agent ; but he thought that surgeons should not form the habit of depending too completely upon skiagraphy, as it is not always available—sometimes gives deceptive impressions. He spoke of a case of Colles' fracture in which the deformity had been reduced and the dressings applied. The skiagraph through the dressings indicated a bad position, due probably to a shadow from the plaster on the plane in which it was taken, for after the dressings were removed the picture showed the fragments in excellent position. This patient is now a cadet at Annapolis, which is proof that there is no deformity or impairment of function. He personally preferred the anterior and posterior splints made of recurrent layers of plaster bandage, fitted to the arm leaving the fingers and thumb exposed and held in place with a crinoline bandage. This dressing allowed of early and easy examination, by cutting through the crinoline. The splints were light and durable, and could readily be adjusted by means of a fresh crinoline bandage or strips of adhesive plaster.

Dr. Vale said this fracture was so common every one had had more or less experience in its treatment. He showed a number of radiographs which he had accumulated during the last five or six years, illustrating several aspects of the fracture. One case was supposed to have been a sprain ; there was no deformity other than the advancement of the styloid process of the ulna to the same plane as that of the radius, yet the negative showed an extensive fracture. Another negative illustrated a common result, a stiff wrist ; a plaster of Paris dressing had been left on six weeks, and, of course, the result was disappointing when it was finally removed. In contrast to this was one showing the fragments in good position at the end of the third week, in which case the patient was playing the piano ten days after the removal of the simple retentive dressing. Good results depended, as in the case of all fractures in and near joints, on early mobilization ; not only should the fingers be unconfined, but passive motion of

the wrist, too, should be begun as soon as the inflammatory swelling had subsided—this also permitting of frequent inspection and correction of any tendency toward redisplacement. The good results of Lucas-Championnière were due as much to early mobilization and simple retentive apparatus as to his methods of massage. This authority had especially described lately a class of cases due to the "back kick" in starting an automobile engine; they were easily reduced, as from the direction of the breaking force there was no tendency toward impaction, and practically no retentive apparatus was necessary.

Since the introduction of the *x*-rays it had been found that a fracture of the tip of the styloid process of the ulna accompanied the majority of Colles' fractures. One deformity not usually referred to was a lateral displacement of the ulna from the radius, due, without doubt, to rupture of the anterior and posterior radio-ulnar ligaments. If the *x*-rays showed this to be excessive, Dr. Vale thought a narrow splint applied along the edge of the ulna was indicated. Colles, in his original article, described the use of such a lateral splint believing that by thus bringing the ulna against the radius it aided in maintaining the lower fragment of the latter in position.

Dr. Jack said that the ground had been thoroughly covered and that nothing remained to be said except that in old persons anesthesia could not be used. In such cases, stiffness was inevitable. In young persons there was no excuse for bad results. A simple retention apparatus, after thorough reduction with early massage, should always give satisfactory results. In old persons, a straight wrist with more or less stiffness was all that could be expected.

Dr. Balloch, in closing the discussion, said that he had made no attempt to describe all cases or all complications. He wished to describe the typical cases and the best way to treat them, as an aid to the general practitioner. The bad cases came to the surgeon in any event, and it is the general practitioner who should be familiar with the proper methods of management, in order to avoid unsatisfactory results.

CASE OF UTERINE FIBROID; HYSTERECTOMY.*

By G. W. WOOD, M. D.,

Washington, D. C.

Dr. Wood said that the specimen showed nothing very unusual either in appearance or size. He reported the case more on account of the singular history.

A single woman, aged 52. She had had the tumor for twenty years and had been treated for it eight years. Every winter she went to a hospital in Baltimore, where she remained for treatment for from three to five months. The treatment consisted of curettage, which was done three times under anesthesia, of local applications of iodine, and of the administration of thyroid extract, which had been given in large amount. Hemorrhage was a frequent symptom, which was treated by the use of ergot, rest and tampons.

The physicians at the hospital finally told her that an operation was necessary, but that she would probably die when the operation was attempted. She left the hospital intending to return for operation this autumn.

She came under Dr. Wood's observation, and, on examination, he found an enlarged uterus with a patulous os. A sound could be introduced easily to the extent of five or six inches, and a considerable cavity within the uterus could be demonstrated.

He told the patient that she could not be cured by medical means and advised hyst -ectomy. Dr. Bowen saw her with him and concurred. The patient appeared to be in very good physical condition ; there was no evidence of thoracic disease, and the digestive apparatus was unimpaired, except for a tendency to constipation. The blood showed 70 per cent. hemoglobin. The operation was done, and after an uneventful recovery, the patient left the hospital well in 28 days.

He reported the case to show what amazing methods are used in the treatment of uterine fibroids and to emphasize the futility of medical treatment and curettage in this condition.

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*Reported with specimen to the Medical Society of the District of Columbia, October 11, 1905.

PREVENTIVE TREATMENT OF SENILE CATARACT.

By OSCAR WILKINSON, A. M., M. D.,

Washington, D. C.

It has been the custom for years amongst general practitioners and a great many ophthalmologists to advise a patient with a beginning cataract to go untreated until he becomes blind, at which time he can be operated on. My experience for the past ten years has convinced me that this advice is entirely wrong. I have come to the conclusion, from close observation in these cases, that cataract is the result of a disease of the eye or some constitutional disorder, and deserves to be treated the same as any other disease.

The cataractous lens is not to be looked upon as an excessive change due to age. This idea probably has been the cause in a great measure of the seeming lethargy in regard to the preventive treatment of cataract. Cataract is not a mark of old age, as gray hairs, stooped shoulders and shrivelled limbs. That the lens does undergo physiological changes during senility we are aware. These changes consist in a loss of its elasticity, a change in its color, and probably a very slight loss in its transparency, but cataractous changes are of an entirely different nature. They are "chemical, not morphological" (Stricker). Collins, Jacobson, Priestley Smith and others have found that the weight of the cataractous lens is far below normal. This is probably due to a loss of water in the lens on account of malnutrition.

Ophthalmologists have not taken advantage of the recent improvements made in medicine in the way of examining the excretions and secretions, and the various fluids of the system for detecting obscure conditions at variance with health. When we do make use of these advantages a greater confidence will be engendered among us, and a more scientific and successful treatment can be instituted for the relief of these cases.

To some of you the idea of preventive treatment of cataract may smack of quackery. From the earliest times to the present day manifold remedies of absolutely worthless value have been lauded as specifics for cataracts. Plinius (XXVIII, 8) praises "honey and saffron cooked in the bile of hyenas." In 1876 the scientific and political journals of France and Germany lauded the virtue of dilute phosphoric acid as a specific for gray cataract. Today both the secular and the religious press are filled with

various advertisements for cures of cataract which are as worthless as their claims are preposterous. Stricker (Chrystalline Lens System, page 260,) says of the present treatment of cataract, "at the present day the therapy of the lens is confined entirely to operative procedure." He says that prophylactic measures should be confined to special cases, such as traumatic cataract. He, however, anticipates the prophylactic treatment, as he says on the following page: "It is evident that every variety of cataract which is not a congenital malformation of disease, or which is of traumatic origin, is either secondary to some disease, either local in the eye, or some general disease of the entire organism. With a more complete knowledge of the causation of these latter forms of cataract we may hope by applying proper treatment at the proper time to prevent their occurrence." The possibility of the prevention of cataract in a large percentage of cases is now well recognized. Weeks (*Trans. A. M. A.*, 1900, Oph. Sec.,) says: "Local therapeutics and other measures to improve health based on the constitutional condition of the patient have a wide range and are of value in preventing the progress of cataract." de Schweinitz (Sec. Oph., A. M. A., p. 242, 1900,) says: "When streaks of opacities begin to appear in the lens of an eye with a choroid coat like the type described (flannel-red, woolly in appearance) I am convinced that properly applied therapeutic means are of avail in checking the progress of the disease of the eye and favorably modifying the choroidal changes." In these opinions such men as Galezowski, Schoen, Magnus, Risley and Jackson concur.

I do not wish it to be understood that I claim to be able to cure cataracts. Such absurd claims are most flagrant charlatanry. I think I am supported by the profession when I say that there is no known means of clearing up the clouded cataract lens. When a lens has once become opaque I think no process can ever clear it up. Stricker (l. c.) says: "I do not believe we will ever succeed in causing a retrogression after the processes of cataract formation have once set in." Bulson (*J. A. M. A.*, Sept. 23, 1905,) says: "In those cases in which the cataract formation has become well established I do not believe it is possible to cause a retrogression." de Schweinitz (l. c.) says: "Drugs do not exist which can dissolve a growing cataract." Pyle (*Phil. Med. J.*, March 17, 1900,) says: "Drugs have proven absolutely valueless."

Risley (Tran. Sect. Oph., A. M. A., 1900,) says: "I have never seen such opacities disappear."

Before going further I beg to pay my respect to the various "absorbing drops" so freely advertised by quacks, some of which are commended and used by homoeopaths. Of the chief of these, *cineraria maritima*, Jennings (*Am. Jour. Oph.*, Nov., 1898,) has the following to say: "In conclusion, I would state that, so far as I could learn, there is no evidence to show that Cineraria Maritima is of any value as a curative agent in cataract." These concoctions deserve to be mentioned only to be condemned.

While it is considered by the best authorities that opaque lenses are not amenable to treatment, it is true that a number of cases of greatly improved vision have been reported by men of unquestioned integrity. The improvement seen in these cases of cataract can probably be accounted for by the clearing up of the vitreous, improvement in general health and the arrest of the inflammation of the retina and choroid from the treatment. There have been found no authentic cases in which the lens itself has become clear, and where such claims have been made it is usually considered that it is due to a mistaken diagnosis. These reported cases of improvement under treatment are very strong arguments in favor of a preventive treatment of these cataractous cases.

Statistics make dull reading, and reports of cases suggest egotism, hence I will not burden you with any of these tonight, but suffice it to say that for the past five years I have not had a case of incipient cataract in which the vision has grown materially worse when I have been able to keep the patient on the treatment. I now have a series of twenty-one incipient cataract cases under my care which have been under observation for five years; not one of these has shown any marked degree of loss of vision. Only one of them has had any decrease in vision at all, and in this case the vision eighteen months ago was 6-6 and now it is 6-9, notwithstanding the fact that this patient has been incapacitated from rheumatism for three or four months in the meantime, during which time he was not under my care.

Before a scientific treatment of incipient cataract can be instituted it is necessary to consider its etiology. Since the days of Plinius there have been numerous causes ascribed to its production. Some of these contain a great element of truth; some contain very little truth, while others are too absurd to mention. Of

those containing enough of truth to be worthy of mention, are, Constitutional Disturbances, Associated Ocular Diseases, and Errors of Refraction and Accommodation. In many cases these are necessarily inseparable, and the treatment must cover both conditions.

The constitutional theory is evidently one containing much truth. The general health of these individuals has so much to do with the production of cataract that I am in the habit of telling these patients that the question of their losing their sight from the cataract will depend largely upon two things: first, their general health; and, second, their zeal and persistence in following the treatment. I am so confident that this is true that I have the patient's family physician examine him most carefully for any intercurrent disease. These persons should be considered as sick and looked upon as having some obscure disease, and it is the oculist's duty, aided by the general practitioner, to find that disease. I am inclined to think that cataract is, as a rule, not a disease in itself, but a symptom of either a constitutional or an associated ocular disease. I am sure that this will explain the occurrence of at least 90 per cent. of all cases of cataract, and I am almost ready to agree with Becker (Pathology und Therapie, page 22) when he says that, "strictly speaking, there is no such thing as primary cataract; that such expressions are simply cloaks for ignorance." I believe that it would be possible in 99 per cent. of these cases to locate either a constitutional disturbance or an ocular disturbance, acting as causal agents, if our means of diagnosis were better and we would exert ourselves more in seeking for such factors. Stricker (l. c.) says: "Constitutional disease manifests itself in its action on the lens in such a manner that it either first causes disease of other portions of the eye, thereby leading to a pathological changed vitreous, which in turn leads to a disease of the lens and cataract formation, or the lymph of the entire organism becomes changed, thus leading to cataract formation without any other disease of the eye having previously existed."

There are various theories in regard to the disturbance of certain organs in producing cataract. Deutschmann found that nephritis was present in 33 per cent. of his cases, and attempted to make a classification of cataract due to that cause. That cataracts are due to diabetes is well known to the profession. This is probably due to the general malnutrition which has been

proven to interfere with the nutrition of the lens. The vesicular cells of diabetic cataract can only be accounted for by its abnormal nutritive supply.

Michel thinks that atheroma of the carotids produces cataract. He claims that by the slowing up of the blood pressure in the carotids, a lowered nutrition is thus brought about in the lens, and cataract follows. Of these two theories Professor Weil (Stricker) says, "This pathological condition of the vessels (claiming that the atheromatous condition of the carotids extends to the smaller vessels of the eye) of the uvea would then offer us the intermediate link in the chain between cloudiness of the lens on the one hand, and nephritis and atheroma of the carotids on the other." Galezowski thinks that cataract is due to heredity, gout and various diseases of the choroid. Risley (*University Medical Magazine*, March 19, 1889) thinks that most cases of cataract are due to diseases of the choroid which are in the majority of instances due to an error of refraction. Associated ocular diseases and errors of refraction as etiological factors are well recognized, and will be considered under "Treatment."

General Treatment.—The etiology of cataract suggests to us the line of treatment that should be pursued for its prevention. The treatment should be constitutional and local. The constitutional treatment should consist in meeting any condition that is found to be interfering with the patient's general health. It should include the investigation of every organ in the system that might possibly be diseased. The lungs, the circulation, the kidneys, the liver and the digestive organs should all come in for their share of attention. Gouty, rheumatic or lithemic conditions are frequently present and should have dietic and medicinal treatment. The urine should be examined for albumin and sugar; the amount of solids therein should be ascertained. The liver, that organ on which much burden is always placed, should be treated when diseased. The digestive apparatus is one of the most frequent sources of poison to the general system. When these organs are out of order they should be treated by the general practitioner and should be kept in good condition.

There are three medicinal remedies which I am in the habit of prescribing for these patients after the general practitioner has corrected any special disease. I prescribe alteratives, tonics and a free quantity of alkaline water. I think the free use of lithia

water is especially indicated in these cases. The fact that the lens weighs less in cataractous cases might explain the reason for the need of water. It has been demonstrated that the cataractous lens contains less water than does the normal lens. The use of a large amount of water is especially salutary. It flushes the kidneys, clears out the skin and improves the health generally. As a rule, we all drink too little water and eat too much food. The alteratives that I am accustomed to use are the iodide of potassium, iodide of sodium, pilocarpine and biniodide of mercury. These should be given in small doses for a long time. I usually prescribe from five to ten grains of iodide of potassium, 1-30 to 1-48 grain of biniodide of mercury in compound syrup of sarsaparilla, taken three times a day after meals in a large quantity of water. This should be taken for three months or four months, after which time it should be given every other month for a period of from six months to a year.

The general tonics which are indicated are iron, quinine, strychnine and gentian. The condition of each patient will determine which of these tonics, or which combination of them, is demanded. In some cases which I have reason to believe are very liable to progress I am in the habit of prescribing pilocarpine in large enough doses to get a physiological effect, to be taken at night. In cases with a marked lithemic condition present, Turkish baths three times a week, associated with proper constitutional treatment are indicated. Besides the above medical treatment, the use of hot stupes to the closed eyelids twice daily is of benefit in creating a better circulation of the parts and is always pleasant to the patient. I would be inclined to use dionin in a case where the lens is much swollen. I think that it might possibly have some effect in reducing the active inflammation within the eye and thus assist the general treatment. Any of the collyria for conjunctival irritation, when conjunctivitis is present, may be used, but these have no effect upon the prevention of the cataract.

Exercise in the open air I consider essential. Out-door exercise in the way of walking is especially beneficial. These patients are prone to stay at home. Owing to their general feebleness and their beginning loss of vision, they lose confidence in their ability to take care of themselves, and thus stay at home until their systems become stagnated, as it were, and self-intoxication, with its

general evil results, follows. This is especially true of women whose duties seldom call them out of the house.

Treatment of Associated Ocular Diseases.—The gross lesions of the eye which produce cataract, such as plastic iritis, syphilitic lesions of the uveal tract, glaucoma, and gross choroidal lesions are too well known to discuss. It is the low-grade inflammation of the choroid which causes the trouble. Risley (*University Medical Magazine*, March, 1889) says "It is usually not the gross lesion which does the greatest damage, but the low grade of inflammation of the choroid and retina that is apt to be overlooked. They often start in early life and are not noticed until the whole health of the eye-ball is damaged." These are the eyes that are reported by the parents as being naturally weak since the child had measles, scarlet fever, or some one of the various other diseases of childhood. There is no question but any disease of the choroid, the retina, or ciliary body, or any disease which may interfere with the nutrition of the lens may, in course of time, interfere with its transparency.

Optical Treatment.—This consists in the correction of the errors of refraction and accommodation. Formerly this branch of the treatment was very much neglected. I have had cases come to me (after having been seen by one or more competent men) whose vision, without glasses, was as low as 6-30 or 6-60, while with the corrections their vision could be brought up to 6-12 or 6-9. The diminution of vision in such cases is usually attributed to the lenticular opacities, and the refractive condition is much neglected. The constant strain on the ciliary muscles to overcome these refractive defects aids materially the process of malnutrition, thus producing the cataract. Risley found that out of 81 cases, 40 per cent. had marked symptoms of asthenopia before the cataract process began. It is the experience of every oculist that the treatment of chronic inflammations of the uveal tract is never complete until the refractive error is corrected. It is the general opinion that the refractive trouble is the father of almost all the low-grade inflammations in the interior of the eye. Adt, Risley, Schoen, Jackson, de Schweinitz and others have written concerning the importance of this subject. The healthy eye loses to a certain extent its accommodative power at the age of 40, and then near work becomes difficult. If added to this there is any astigmatism present, and

this has been allowed to go uncorrected, the already weak accommodation has to overcome this astigmatism and the strain is naturally greater. This constant effort to overcome the ametropia causes an extra amount of blood to be kept in the parts until this hyperemia from excessive work finally sets up a low grade of inflammation, and the nutrition of the lens is thus affected. If this is permitted to continue the lens begins to show some opacities, which gradually increase until the patient becomes aware that his sight is becoming obscure. At this time, after he has made futile efforts to get glasses from some so-called "scientific optician," we see this patient first, *i. e.* after there has been a permanent deposit in the lens and the cataractous process is under headway.

It is the experience of all who have made any study of the prevention of cataract that the early treatment of the cataractous process is more encouraging than it is when the process is well advanced. All the literature bearing on this subject shows that in incipient cases it is possible to prevent a high percentage from progressing, while in cases that are well advanced, to check the process is possible in only a small percentage.

The early correction of the ametropia and the constant use of such correction, both for far and near, is important. I am convinced that no single remedy can do so much for low-grade inflammations of the uveal tract as the wearing of proper lenses. This I consider so necessary that I usually prescribe bifocals, in order that patients may have their glasses with them. It is best that these patients should use their eyes sparingly, and they should be forbidden to attempt any fine needlework or any work that is very difficult to see. The cataractous eye should be looked upon as a diseased eye, and a diseased organ needs rest.

When ophthalmologists show as much zeal in studying the preventive treatment of cataract as they have shown in perfecting the operative technique for its removal, the need for the operation will materially decrease. I do not wish to depreciate the work done along this line; it has been not only commendable, but has been brilliant in its results, and has made the operation for cataract one of the most successful operations known to surgery. Yet, while this is true, I am positive that the preventive phase of cataract treatment has not come in for its share of attention from competent men.

Dr. W. K. Butler opened the discussion, and said that he had heard the paper with pleasure. The subject of cataract had been under discussion for years and always proved interesting. Surely it was always of great interest to the patients. They were always greatly disturbed and frightened when told they had cataract. Nervous women especially were badly affected by such information. He remembered one woman who was driven almost insane by being told that the lens was becoming opaque. On this account he thought that such information, in many instances, should be withheld.

He was not convinced that the prevention of senile cataract was possible, though he believed with Dr. Wilkinson that the care of the general health was most important. Dr. Butler pointed out with reference to the theory of causation by circulatory disturbances that the lens derived its nutrition from lymph channels, not from blood vessels. The beginning of cataract could be seen in the cleavage which occurred at the periphery of the lens. He believed, however, that it was not justifiable to tell a man that he was going to have a cataract because this beginning cleavage was discovered. Years might elapse without the slightest progress being made, and the patient might never be aware of any defect unless the pupil should be so dilated as to make the marginal opacity apparent. He believed that cataract was not always progressive, so that we cannot say that we can prevent it. He spoke of the great frequency of the condition in India, and said that some surgeons there had done 40 or 50 operations a day for the relief of cataract. He thought that there must be some local influence which determined the incidence of the disease there. While he believed that general innutrition and errors of refraction had a place in the etiology, they did not stand alone, and some additional cause must be sought. He indorsed Dr. Wilkinson's general line of treatment, but believed that not many patients would submit to such minute and long-continued control. He wished to emphasize the fact that striation of the lens did not always mean that cataract was going to ensue.

Dr. E. Oliver Belt said that Dr. Wilkinson had so thoroughly covered the ground that he himself had little to add. He believed that the care of the general health and the correction of refractive errors were very important, but beyond these measures there was little else to do. Lenses showing opacities might present no change after eight or ten years had elapsed, and it was difficult to decide whether treatment was in any way responsible for the slow progress. Of course it was most important to treat any intercurrent ocular disease. He thought that the use of dionin was contraindicated, as it depleted the globe of serum; the fault to be corrected in the treatment of cataract was the lack of sufficient water in the lens.

Dr. H. A. Polkinhorn said that he had enjoyed the paper. He

was somewhat disappointed in the title; he had hoped to hear of some method of preventing cataract, not of retarding its progress. We do not see cataract at all until the process has started. He pointed out that the condition was seen as frequently in those who had excellent health as in the debilitated. Cataract might mature in three months or it may take a lifetime. For this reason he did not think it always well to tell the patient he has cataract; the striation may never ripen to a mature cataract. Dr. Polkinhorn always told a friend or relative of the patient about the opacity. To retard the maturation process was undesirable in many cases, as the progress is often not rapid enough, resulting in an incapacitating dimness of vision and not an operative opacity. Many oculists hold that the patient is benefitted by the maturation of the cataract in that the retina is put at absolute rest, thus curing the choro-retinitis which was the cause of the lenticular disease. He thought that there was no necessity to attempt repeated changes in the glasses of the progressive cases, as the lenticular convexity was in a state of constant change. He thought that the treatment outlined by Dr. Wilkinson was hardly practicable, but he indorsed the opinion that the general health should be carefully guarded in these cases.

Dr. R. S. Lamb said that there was evidently some misunderstanding regarding the pathology of cataract. It had been found that in unripe cataracts the anterior and posterior or superficial fibers of the lens were much swollen—in other words, contained more fluid than normal. As the cataract ripened the nucleus and then the superficial layers lost water, and shrinkage of the fibers took place. In hypermature or Morganinian cataract, the fibers of the nucleus were shrunken and hard, while the superficial layers had become fluid. Sometimes within the nucleus between the fibers little lakes would be found, probably the degenerated product of certain of the nuclear fibers. If, therefore, Dr. Wilkinson's suggestion of the increase of water to the lens by the administration of large quantities of mineral or other waters internally were correct, he would probably hasten the formation of cataract instead of preventing it.

Dr. Geo. M. Kober said that he had appreciated Dr. Wilkinson's paper; it was full of practical suggestions and of value to both the general practitioner and specialist. Dr. Kober looked upon the free administration of water as very rational, not because of its specific effect upon the lens, but for flushing out the emunctories of the body, and thus contributing to the removal of effete matter from the circulating fluids, which doubtless plays an important part in all processes of malnutrition.

Dr. Wilkinson, in closing the discussion, thanked the gentlemen for their remarks. In regard to the ingestion of water, many writers on the subject agreed that its free use was salutary. As regards the amount of water contained in a cataractous lens,

Treacher Collins, of the Royal London Ophthalmological Hospital, had weighed many lenses at all stages of progress, and had found them all below the normal weight.

Whether or not the patient should be told he has a cataract, depends upon the patient. Just as telling a sensible consumptive his condition and how to combat it, improves his chances, so in cataract. In nervous patients or in those who have not sufficient confidence in the physician, the information had better be withheld. But he believed it to be best to tell the sensible patients, and he found them almost invariably most satisfactory and diligent in their attention to treatment.

CASE OF MULTIPLE ABSCESSES OF THE LIVER, WITH PYLEPHLEBITIS AND ABSCESSES IN HEAD OF PANCREAS.*

By J. DUDLEY MORGAN, A. B., M. D.,

Washington, D. C.

The specimens before us are from a gentleman aged 70, who had spent a great part of his life in Hawaii, but who during the past two years has resided either in Washington, D. C., or Hampton, Va., and who died recently at Garfield Memorial Hospital, of multiple abscesses of the liver. A pylephlebitis and an obliteration of the common and pancreatic ducts were also found.

The history of this case is of some interest as showing how we and some others are apt to be misled at first into treating these cases as malarial. The patient gave a very clear account of his sickness, saying he had been very well up to six weeks ago, when he was taken with chills and fever and was treated with quinine; although the chills seemed to be obstinate, he finally got better and came to Washington; he very soon had a return of the chills and went to the Hot Springs, Va., where he remained but a few days and then returned and entered Garfield Hospital. On examination at the hospital, October 2, some slight fever was noticed, a very slight icteroid hue of the skin, the tongue a little redder, no enlargement of the spleen, but a slight lowering of the liver dullness; the heart and lungs were negative; the patient was cheerful, and told of his malarial attacks at Hampton, Va.,

* Reported, with specimens, to the Medical Society of the District of Columbia, October 25, 1905.

and how he had taken quinine. A blood examination October 3 was negative for malarial parasites. Quinine was prescribed in 5-grain doses three times daily, and in a day or so increased to 10 grains twice a day; there was no improvement in the chills, although the patient ate and slept well. October 6 the leucocyte count was found to be very high, the jaundice was becoming more pronounced, and there was some discomfort over the region of the gall bladder and in the back, which was quickly relieved by the hot-water bag. Another leucocyte count, made the following day, was also very high, and the same day Dr. Yarrow saw the case with me, and on the following day. October 10, we called in Dr. Stavely and we determined that an exploratory incision was advisable. It was found that the gall bladder contained no stones and was not distended; common bile duct not palpable, liver not nodular, but of a dark purple color, and presented one yellow spot about a centimeter in diameter, that seemed to be a necrotic focus; it was punctured with a small osperating needle, but yielded no true pus. It was deemed inadvisable to proceed further. The patient lingered for four days. The autopsy showed huge multiple abscesses of both lobes of the liver, a suppurative pylephlebitis with thrombi, and apparently an obliteration of the common and pancreatic ducts. The spleen was slightly enlarged, its pulp of a deep red color, and was softened. The mucosa of the stomach was studded with a large number of minute ulcers, many of them cicatrized. Firm adhesion between all adjacent structures in vicinity of gall bladder and common duct. Staphylococcus aureus and streptococcus were found in the pus from the liver. The points of interest are: How long these abscesses have been forming; when did the primary infection take place and how did it enter; the likelihood of treating these cases for a time for malaria.

Dr. D. S. Lamb said that the case presented many points of interest. He had carefully examined the specimens and had found that the infection might have come from the stomach, pancreas, spleen, or omentum. The superior and inferior mesenteric veins were both normal, as were all the veins in the vicinity except the splenic. This fact showed that the infection must have come through the splenic vein, though just where it originated could not be determined; the pancreas was involved, but only in its head—possibly it might have been diseased elsewhere, but only that portion where he found the abscesses had been sent to him for

examination. The ulcers found in the stomach could not account for the infection of the splenic vein, unless they were present at the cardiac end, which did not seem to be known; if they did exist at the cardia they could be easily held accountable for the infection through the splenic vein. Abscesses were found in the line of both the hepatic and the pancreatic ducts. There was much obscurity about the case, but with the abscesses in the head of the pancreas it looked somewhat like an ascending infection. Abscesses of the pancreas were very rare; Gilman Thompson, in 1903, said that there were then only 50 cases reported; probably other cases had since been reported.

CHOLELITHIASIS, OR GALLSTONE DISEASE.

By I. S. STONE, M. D.,

Washington, D. C.

We have observed an increased interest in the study of "Cholelithiasis" since the diseases of the organs contained in the upper abdominal cavity have received so much attention from pathologists and surgeons who have not only made *post mortem* notes, but who have relied upon the conditions found at the operating table upon the living subject. We are assured and we firmly believe that the diseases of these organs are frequently associated, and that the symptoms of each are often mistaken for those of the others.*

We have no good reason to think cholelithiasis peculiar to any age or locality or influenced by heredity. Gallstones have been found in infants at birth (Moynihan), and it is possible that some of the severe colics of infancy are due to this cause. Aside from the above statement of fact we have every reason to believe that children are less frequently the victims of cholelithiasis than adults. In the very old the disease is not so frequent as in middle life, unless associated with carcinoma. The years between 30 and 60 appear to furnish by far the greater number, and females are decidedly more subject to this disease than males, in the proportion of 5 to 1.

* Some time ago, while intently studying one of the cases of dilatation of the stomach which was reported here some months since, I wrote to a friend, one of the most distinguished surgeons in this country, giving him all the symptoms and expecting him to agree with me that the patient had pyloric obstruction. His reply was favorable to operation, and in the main he agreed with me in the diagnosis, but he reminded me that all these symptoms might be due to gallstones.

Anatomy of the Gallbladder and Bile Ducts.—By referring to the sketches which we now present, one can easily refresh the memory regarding the most important anatomical structures under discussion. We are enabled to see why patients have many diseases of the biliary apparatus without jaundice or how infection may enter the gallbladder and set up mischief without being followed unaided by recovery. They also show how stones may wander into the hepatic duct and how pancreatic complications may arise which are often due to obstruction at the ampulla of Vater. We wish to call attention to the difference in the position of the gallbladder when the patient is reclining, or sitting or standing. The tortuous course of the cystic duct may prevent the ready passage of probe or fluids, whether these fluids are the natural secretions or those introduced by the physiologist or surgeon. We also observe what is of the greatest importance to the surgeon, namely, the relative position of the hepatic artery, the portal vein, and common duct. All of us are supposed to know that the position of the ducts is very near to the median line, and while the bladder may be reached by the usual incision outside the Rectus, that the ducts are best seen through an incision which combines both the median and lateral operation.

Causes.—The experiments of various investigators have pretty well convinced us that gallstones are a result of infection which for the most part enters by way of the common duct. Sherrington (*Br. Jour. Path. and Bacteriology*, 1893,) showed conclusively that healthy bile, which flows freely and without obstruction, will generally prevent the ingress of infection, but that obstruction favors sepsis. The gallbladder furnishes by far the greater number of stones, and it has been shown by Budd (1845) and others that chemical irritation within the bladder will cause the excretion of cholesterin and bilirubin with calcium, which are the constituents of most of the calculi found in the bladder or ducts. While some content themselves by saying that calculi form as a result of defective metabolism, we favor the idea, which is at least a practical one, that infection of some kind enters the ducts, and that whether or not the stones form as a result of this infection, or whether they existed previously, the combination is a dangerous one, and to be feared because we are confident that infection is possible, and, in fact, the more readily occurs if the ducts are not freely open. It has been shown that foreign bodies have

proved perfectly innocuous in the gallbladder unless infection enters in some manner, and we have all seen stones present that had never been suspected. But we must call attention to the danger of microbal invasion, for we have abundant reason to think that nearly all the dangerous symptoms result from this source, whatever may have been the original cause of the stones or other form of obstruction. Galippe was the first to suggest the microbic origin of gallstones (1886). Later (1890) Welch found the bacillus coli communis and staphylococcus pyogenes. Hanot discovered the bacillus typhosus in the ducts. Many observers unite in teaching that this bacillus is the most persistent of all the bacteria, and Cushing has found that at least 30 per cent. of all gallstone cases have had typhoid fever. It is an interesting fact that in some instances the typhoid bacillus has been found in the center of the stone. Experimenters have produced the formation of concretions by the injection of attenuated dilutions of toxins, it having been shown that the stronger or lethal solutions have caused excessive reaction, which prevented the success of the experiments. Several months are required for the growth or development of the concretions. Besides the above mentioned causes we appear to be unable to find any explanation of the presence of gallstones. Ewald thinks acid stomach (Hyperchlorhydria) is one of the predisposing causes, but, personally speaking, we see no special reason to attach any importance to this suggestion. We have no definite knowledge of any habit or circumstances which may contribute to the formation of gallstones or which may induce an attack of colic.*

Exposure, dissipation or excesses of all kinds have not appeared to favor attacks of colic, while, on the other hand, we rather more frequently see or hear of attacks during periods of rest, or at night after a few hours rest or sleep.

Symptoms.—It may be taken for granted that there are no definite symptoms which indicate conditions favorable to the formation of gallstones or their presence in the bladder or ducts. Mayo thinks the presence of a stone in the stools after an attack of colic may and generally does indicate the presence of additional stones at some point in the biliary passages. One hesitates to review the long list of symptoms which have generally been as-

*In Moynihan's book we see an illustration of concretions having formed around silk sutures which had been left in the bladder.

cribed to the presence of gallstones, and we rather prefer the course which is practiced by most surgeons, in order to have what may be called a working formula, for want of a better name, but which is practical and which is quite as reliable as any other. This method will cause us to look for a tumor if the patient has not had jaundice, or, on the contrary, to expect not to find a tumor when jaundice is present. If jaundice is present with a tumor we may look for some malignant or other obstruction outside the ducts. If pain is present we can generally say that it is in the gallbladder or cystic duct if there is no jaundice; but there are exceptions to this rule, for we have seen a stone in the common duct small enough to permit the passage of bile, and therefore the element of obstruction was absent. It was Courvoisier who said that the contracted bladder indicated stone in the common duct in 80 per cent. of cases. This has been since known as "Courvoisier's law." The classical symptoms are then, pain with or without tumor and with or without jaundice, as the obstruction or infection and its results are situated in the bladder or in one of the ducts. But it is our wish to call attention more particularly to "Cholelithiasis" without, rather than with acute infectious mischief present, and we will only speak of the latter as a contributing cause. We agree with those who find new and additional indications for surgery in those cases of Cholelithiasis which have been misunderstood or which have been neglected because there was no apparent or immediate danger to the patient's life, although there was no reason to hope for a speedy cure by medical treatment alone. The tumor cases are better understood, as are the common duct cases, where jaundice attends or closely follows an attack of severe pain or colic in the region of the bile ducts. But there are many others which are not so easily understood and which are being treated by stomach specialists as cases of gastric catarrh or else as hyperchlorhydria, and many cases are set down as nervous dyspepsia if an examination of the contents of the stomach fails to show actual disease of that organ. Indigestion and biliousness, cramps, etc., are all frequently associated with gallstone disease, and we have ourselves seen more than one case of obstinate vomiting, which had resisted the very best obtainable treatment, cured by a cholelithotomy. We may be accused of an admission of our inability to make a diagnosis, and if so we plead guilty, for we are confident that the symptoms of cholelithiasis

and those of gastric ulcer with possible pyloric stenosis are often quite similar. We never feel absolutely certain that stones are not present in some part of the biliary passages in every case where we operate upon the stomach or other organs in the upper abdomen. "The commonest of all symptoms," says Moynihan, "is nausea or indigestion in some form. While this nausea is generally reflex in character, it may be due to direct irritation of the stomach by stones impacted in the common duct."

A word as to the pain or colic itself. Severe pain is to be controlled by anodynes, and the action of the anodyne will often aid us in making a diagnosis. If the relief is prompt we may reasonably conclude that the stone had not engaged in either of the ducts. If we remember that the cystic duct is not over ⅛ inch in diameter we will expect to see a continuation of pain and the necessity for the continued use of morphia. If the patient has had several attacks of pain without jaundice, we will remember that Fenger once described the "ball valve" stone which partially engaged itself in the neck of the bladder and may be held there by the muscular contraction of the bladder until the use of some anodyne perhaps relaxes the pressure and allows the stone to fall away. The passage of stones through the common duct produces as much pain as that above described, in the cystic duct, with the addition of far greater constitutional disturbance. This greater and more tedious pain is largely due to the greater length of the common duct, and to the rapid bile intoxication which accompanies or immediately follows the beginning of the attack. We have not the time to proceed with the symptoms or course of these cases after a continuation of obstruction has resulted in severe jaundice or cholemia.

Results of Obstruction.—One of the common results of cystic obstruction is infection of the gallbladder with rapid distension and change of the contents of the viscus from pure bile to mucus and serum, and finally to pus of an exceedingly infectious character. The bladder will permit very great distension before rupture occurs. A not unusual mistake is to call such cases appendicitis. To be sure there is pain at the appendix point, and there is a tumor, and also fever and possibly nausea and vomiting, but it should not be very difficult to decide between the two diseases. We are inclined to believe that the muscular rigidity which is common to both diseases, obscures the tumor which extends up-

ward to the rib in the gallbladder cases and thus proves a deceptive, if an irresponsible factor in the diagnosis. Rupture of the gallbladder occasionally proves fatal, when unsuspected. Fortunately, a small opening which will permit a slow exit of infectious matter may be walled off from the infected area by provisional adhesions. One of the specimens I now present shows a gallbladder which was removed about six weeks since from a lady who had a ruptured bladder four years ago, and from whom we took several stones which had escaped from the bladder some days previous to the time of rupture. The extensive adhesions and the nature of the case, including the very poor condition of the patient under ether, caused us to do a conservative operation, and we were fortunate to save our patient by drainage. The specimen contains several stones which may be presently seen. The interesting part of this history is the fact that the bladder has perfectly closed, had been freed from adhesions, and that other stones have formed. The lady made a perfectly satisfactory recovery and left the hospital in four weeks from the time of her admission.*

Another result of long continued obstruction, which we have observed, is the formation of a fistulous opening between the gallbladder and the adjoining bowel. This is a rare condition, but an interesting and conservative effort of natural forces to provide against peritonitis and to dispose of useless and infectious fluids. This accident is in effect a cholecystenterostomy.

Another occasional result is perforation of one of the ducts. We were so fortunate as to witness an operation by Prof. Kehr of Halberstadt, where an abscess of the liver was forming close by the cystic duct which had permitted the infection to pass through its walls. Finally, we may see an explanation of the various hemorrhages in and about the stomach in these cases of cholelithiasis, and which are due to pressure upon the *vena portae*.

Kinking of the cystic duct is caused by a prolapse of the viscera. Pain in the gallbladder which is frequent after anesthesia, may be due to stone.

Medical Treatment.—To attempt the prevention of cholelithiasis appears to us almost useless so far as its application to a majority of the inhabitants of this country is concerned. To us it appears useless to give any of the drugs of our pharmacopeia. Carlsbad,

* The bladder was opened by the writer, and contained many stones of various sizes, besides a large amount of mucus, etc.

in Germany, and the Bedford Springs, in this country, are the only places where we have reason to think patients are especially benefited who have either cholelithiasis or the so-called congestions of the liver or its ducts.

Surgical Treatment.—It is said that the first operation for the removal of gallstones from a living subject was done in 1618, by Fabricius Hildanus. In nearly all the cases of early operation the stones were found by accident. The first deliberately planned operation was by Jean Louis Petit, in 1743. The gallbladder was experimentally removed from dogs about 1667 to 1767. Bloch, of Berlin (1774), created an artificial adhesion between the gallbladder and peritoneum by means of irritants, and thus paved the way for the earlier operations, which were done in from two to six stages. Kocher, in 1878, opened the abdomen, packed gauze around the bladder, waited six days, and then opened it; two stages. In 1867, Bobbs, an American, performed cholecystenterostomy in one stage. Many others about this time performed similar operations without a knowledge of Bobbs' earlier work. In 1877, Sims and Keen and König all operated in this way with more or less success. Finally, Langenbech has the credit of having placed this operative work upon a firm and enduring basis. It was not until 1884 that operations were performed upon the common duct, and it is claimed for Courvoisier that he was the first to do successfully a choledochotomy. It is well known that Lawson Tait was the most famous of all operators in this field in the eighties.

In conclusion we wish to state our regret that a subject so extensive and so inviting should be discussed in one brief paper, and in one short evening. The manifestations of cholelithiasis are so various and have so many points of similarity with other diseases that one cannot do more in such a short time than touch upon a point here and there, merely hoping to select that which may be practical or interesting. We shall be greatly surprised and disappointed if there is not an increased interest is the surgery of the gallbladder and the bile ducts in the near future. The time is ripe for further study and observation of these diseases, as well as the diseases of the organs in close proximity to them. By a careful study of all of these organs when the abdomen is freely opened for other reasons, we may learn much of their anatomy and appearance in health and disease, which can never be learned upon

the cadaver. Information gained in this way will often prove useful when we open the abdomen for gallstones and find an entirely different and possibly a most complicated condition which is quite unexpected and which will occasionally tax the resources and skill of the surgeon to the greatest extent.

Dr. J. Ford Thompson said that he did not think that any effort to increase the interest of the profession in gallstone disease and in gallbladder surgery was necessary, as the subject has been prominent in the professional mind ever since Lawson Tait did his great work in this line. He fancied that he (Dr. Thompson) had done the first gallbladder surgery in this city years ago; but the cases at that time were comparatively simple, the operation being usually done only after limiting adhesions had been formed or abscess existed.

Gallstone disease was well understood, but he thought there was need for further study of complicating disease processes in the contiguous tissues, as, for example, in the head of the pancreas. So, also, the technic of ordinary gallbladder surgery was about perfect; but operations on the common duct were frequently most difficult, and embarrassing circumstances were met with in all work in this region.

Stones were sometimes left undiscovered after operations for calculus, perhaps more frequently than was suspected. He related an instance in his own practice in which, after recovery from an operation for gallstones, the patient had a recurrence, with death. The autopsy revealed an additional stone in the common duct.

At the present day the surgeon could work with impunity in the gallbladder region, except in cases where cholemia is marked. Hemorrhage constitutes a formidable danger in this condition, and occurs in the form of an uncontrollable capillary oozing. The only two fatal cases he could remember in his practice died from hemorrhage of cholemia.

The question agitated by Howard Kelly as to the propriety of operating for gallstones when discovered during laparotomy for other conditions, was a nice one to answer. Personally, Dr. Thompson felt that cholelithiasis was such a common condition that only exceptionally was it justifiable to operate in symptomless cases.

His belief was that cholecystectomy was preferable to the old operation of incision and drainage. To leave a diseased gallbladder in place was to leave a lurking source of danger. Before cholecystectomy was done the common duct should be demonstrated to be patulous.

Dr. Stokes asked Dr. Stone to define his attitude toward cases of cholelithiasis; did he think all cases operable as soon as the

diagnosis was made? The question arose in Dr. Stokes' mind, as a result of an experience with an officer who had had an attack of hepatic colic, but who declined operation at the time. After a few hours this patient's condition improved and immediate interference was not insisted upon, but an interval operation was advised. The patient has had no recurrence, and the interval appears to be lengthening out to a permanent recovery.

Dr. F. Fremont-Smith said that the medical treatment of cholelithiasis remained to be spoken of. As one of every ten cadavers yields gallstones at autopsy, the great majority of sufferers from the condition evidently never came into the surgeon's hands. Physicians must therefore endeavor to reduce such patients to a symptomless condition. The ordinary medical treatment was well known. The great benefit gallstone subjects derive from a stay at Carlsbad was undoubted, but unfortunately only a minority could be sent there. Indeed, in most cases the habits of life could not be entirely changed even at home. The olive oil treatment deserved mention, but he did not think that it accomplished much. He related one instance of a recurrent gallstone colic, in which operation had been declined. Delafield, of New York, in this case did lavage at intervals, and after each washing introduced into the stomach six or eight ounces of olive oil. There had been no attack since. The duty of physicians in cholelithiasis patients was serious; he should call the surgeon at the first attack of colic, so that the surgeon might confer with the physician, be cognizant of the exact status of the case, and be ready to interfere promptly if surgical measures became necessary. The second attack nearly always required operative intervention.

Dr. Frank Leech said that the operation for gallstones was, in most instances, very successful, but there was a certain small percentage of cases in which trouble persisted, even after cholecystectomy. He had in mind particularly one case in which there had been severe attacks subsequent to operation, although a stone had been removed from the common duct and the canal proved patulous. He asked Dr. Stone if his experience included any such cases. Dr. Leech thought that in these cases this persistence of symptoms might be due to the formation of pockets high up in the hepatic duct, and that sometimes the failure to get good results was caused by the catarrhal condition left in the ducts even after operation.

Dr. Vale exhibited an *x*-ray negative he had taken that morning in looking for a calculus in a case of right-sided renal hematuria. It was the nearest he had ever come to photographing gallstones; it showed the second to fifth lumbar vertebrae and their transverse processes, crest of ilium, outline of ilio-psoas muscle, borders of right and quadrate lobes of the liver, and between them the outline of the normal gallbladder. He found, on referring to a memorandum, that he had unintentionally

duplicated the technic employed in gallstone cases by Mauclaire, a Paris surgeon—subject on back with plate behind ; tube of medium vacuum and 75 centimeters from plate and excited by a static machine ; exposure of ten minutes. The plate made him hope that in suitable cases, by following up this technic, he might succeed in photographing gallstones. Dr. Carl Beck, of New York, had been the most successful in this line of work ; he recommended the use of a powerful coil ; a tube of low vacuum that would stand a fifteen-inch spark for five minutes ; subject prone with plate beneath him and rays going in from the side, so as to lessen the amount of tissue to be traversed.

There were many points of interest in connection with diseases of the biliary passages. One which had recently engaged his attention, and which had not been referred to, was the date at which surgical intervention was advisable in acute obstruction of the common duct. The patient in question had had two attacks of gallstone colic within a short period. During the second attack two small stones were passed, but three weeks after his temperature had subsided he was still deeply jaundiced and not further convalescing. Pauchet advises waiting six weeks for a jaundice to clear up. Kehr says don't wait longer than three months. In view of the latter's statement that in 800 gallbladder operations he had in only four of them interfered in acute obstruction, Dr. Vale hesitated about recommending an operation to his patient. Dr. Vale finally, however, decided to perform a cholecystotomy, explore and drain the biliary passages. There was a small stone in the cystic duct, and the bile was muddy and thick and contained pus for 48 hours, showing an associated cholangitis, both conditions demonstrating the propriety of the early operation, in this case.

Dr. Edwin A. Hasbrouck said that he had listened to the paper with pleasure. Not every patient would consent to operation after hepatic colic, and the expectant treatment was forced upon the physician. Dr. Hasbrouck had had two cases of this kind, in which he had resorted to the use of olive oil, with gratifying results. He had given one ounce of the oil every two hours, day and night. In one case many fragments of stones were passed and recovered, but none were seen in the other. Both cases, however, are now well.

Dr. Borden wished to speak of three interesting features. First, as regards the etiology, the statistics appear to show that the condition is more frequent in women ; and they also appear to show that it is due to infection. He could not understand why infection of the gallbladder should be more frequent in women than in men and in the interest of prevention, further researches relative to the causation of the disease may in future be of benefit. Secondly, the absence of symptoms in some cases. Many persons with calculi in the gallbladder never presented the slightest

symptoms of the disease. The fact was impressed on his mind by two recent autopsies: 1st, a hospital steward; cause of death, pneumonia; presented at autopsy a small gallbladder completely filled with a single stone. 2d, a soldier; cause of death, nephritis; presented at autopsy a cystic gallbladder, nearly as large as the stomach, filled with clear mucus, and the cystic duct completely occluded by a stone. In neither case had there been any antemortem evidence of gallbladder disease. Thirdly, the necessity for a guarded prognosis of the operation. With reference to the recurrence of symptoms after operation, he said that the prognosis should always be guarded, as relief was not always complete. There was always the possibility of calculi in the hepatic duct, or in the liver itself, in which case the operation would fail to relieve. He thought that most cases of gallstone disease should have the benefit of operation, and fortunately operation is entirely successful in most cases, but the possibility of non-relief should be remembered.

Dr. Randolph asked Dr. Stone what were the indications for cholecystectomy, and what for incision and drainage. The question might prove embarrassing at times, and authorities differ as to the proper procedure.

Dr. G. Lloyd Magruder said that he wished to say a word on the therapeutic side of the subject. He referred to the advantages of the treatment at Carlsbad, and regretted that so many patients were unable to go there. His attention had been directed by a patient to the merits of a plant called *chelidonium majus*, in the treatment of cholelithiasis. Dr. Magruder had with difficulty found reference to the plant in literature, but ascertained that it had been much used and esteemed by the ancients in the treatment of all varieties of liver complaints, and that at this day its use is popular in Indiana as a household remedy. The entire plant is used to make a decoction, which exerted, when administered, anodyne influences. He had used it in several cases with good results. He did not know how it acted, but he presented the remedy to the Society on its merits.

Dr. Stone, in closing the discussion, said that Dr. Thompson had spoken of the large measure of success attending operations for cholelithiasis. Dr. Stone agreed that very many operations were successful; but, in large clinics, difficult complicating features were often met with and the mortality thereby increased. To Dr. Leech he replied that when stones were left in the hepatic ducts the symptoms were not relieved. He endorsed the remarks of Dr. Borden on this subject. Nothing definite could be said in regard to the persistence of symptoms after operation, as so many factors could contribute to such a result. He said that those instances in which no recurrence followed a primary attack of hepatic colic, and in which no stone could be found, could not always be explained, though it was recognized that gallstones are

occasionally dissolved after reaching the intestines.* He was glad there was progress toward radiographic diagnosis of cholelithiasis. The time to operate depended upon the merits of individual cases, but surgical intervention should not be undertaken during an attack of colic, nor in cholemia. He could offer no explanation why gallstones were more frequent in women, if infection were the exciting cause; but this was a statistical fact, and had to be accepted as such. He replied to Dr. Randolph, that the indications for cholecystectomy as against drainage could not be specifically stated, but the decision had to be left to the good judgment of the operator.

CASE OF PERIAPPENDICAL ABSCESS.†

By E. A. BALLOCH, A. M., M. D.,

Washington, D. C.

Mrs. R., white, aged 45, was seen, in consultation with Dr. Strobel, on September 11, 1905. The patient had been seized on the 10th with severe pain in the right side of the abdomen; pulse, 80; temperature, 101 F. Dr. Strobel saw her, made the diagnosis of appendicitis and asked for consultation, with a view to operating. Both consultation and operation were declined, but on the 11th the patient's condition was worse and she consented to have Dr. Balloch in consultation. He found her with pulse, 100; temperature, 102 F.; rectus rigidity, right leg drawn up, abdominal pain and exquisite tenderness at McBurney's point; and she had been vomiting. He confirmed Dr. Strobel's diagnosis of appendicitis, and the patient was removed to hospital for operation. Upon opening the abdomen a mass was felt in the appendical region, adherent and extending down into the pelvis. This mass was peeled up and found to be an inflamed meso-appendix which had been torn away from its attachments in the act of pulling it up. From the site of the mass there was no bleeding, as the arteries of both the appendix and the meso-appendix were thrombosed. The appendix was amputated, the stump turned in, and the abdomen closed without drainage. Dr. Lamb had examined the specimen, and reported that there was an abscess of the meso-appendix, without discovering lesion of the appendix wall. The appendix was atrophied and undergoing involution.

The patient made a good recovery.

*It is very doubtful if any such solution takes place in the animal body.—[Ed.]

†Reported with specimen to the Medical Society of the District of Columbia, November 1, 1905.

FATAL CASES IN SMALL-POX.*

By LLEWELLYN ELIOT, M. D.,

Washington, D. C.

It is well to pause occasionally and study our past work; pass in review our failures and our successes, in order that we may avoid the one, and profit by the other, in the future.

In the practice of any busy physician, a mortality, in enteric fever, of 10 in 100 cases, or a mortality in pneumonia in a similar proportion, causes comment, while a mortality in variola of from 30 to 50 percentum excites practically no adverse criticism, because we are prepared for any rate; it may be as low as 1 percentum, or it may reach as high as 100 percentum, for the reason that very few men give close attention to the treatment of this disease.

As a general proposition, it may be stated, that fatal terminations in small-pox occur on the 9th, the 11th, or the 13th day of the disease; that is to say, should a patient fall ill of small-pox on the first day of the month, his death would, under ordinary circumstances, not occur until the 9th day; surviving the 9th day, he will live until the 11th day; surviving the 11th day, he will live until the 13th day, and should he pass the 13th day his recovery may be expected. Cases of the hemorrhagic type are not included in this statement, since the intensity of the disease may cause death in a few hours, and always within a few days. This is an observation based upon my own experience.

The fatalities occurring during small-pox, according to my experience, have been due to pneumonia, uremia, apoplexy, glossitis, or obstruction of the bronchial tubes, the larynx and the nares by pustules; these pustules so narrow the lumen of these passages that the proper amount of air does not reach the lungs and carbonic oxide poisoning follows, the system then becomes saturated with the two poisons, and death must necessarily result.

According to my observation death will occur in *every* case, where the eruption fails from *any* cause to develop properly upon the forehead, that is to say, where it does not show the distinct papular, shotty eruption; but when the entire forehead and portions of the face are flat and smooth, it is immaterial what may be the condition of the eruption upon other portions of the body.

*Read before The Medical Society of the District of Columbia, October 18, 1905.

This is a strong dogmatic statement but it is borne out by the facts.

During my early management of variola, pneumonia and coma, as causes of death were much more frequent than they have been in later years. The reason for this is easy to find. In the first place patients were moved from their homes to the hospital in the wagon used by the dog catchers; secondly, the hospital building was far from having the proper temperature in cold weather; thirdly, there was no intelligent nursing; fourthly, the great standby for quieting delirious patients, as well as to induce sleep was either morphia sulphate or chloral hydrate; therefore if the patient disturbed the nurse, who was, as a rule, an inmate of either the almshouse or the workhouse, it was only natural to have recourse to the morphia bottle and paralyze the pneumonic lung, lower the heart action, or poison the patient; as a result death was charged to pneumonia or coma, when morphia was the real cause. Then again, I read in one of the French Medical Journals in 1879, an article strongly advocating treatment by salicylic acid and bi-carbonate of soda; this mixture produced in solution sodium salicylate, and locked up the kidneys, preventing the excretion of urine and death resulted from coma. Iced water used externally was another factor in the matter. As there was no Resident Physician, the nurse had unlimited opportunities for the display of misguided judgment or disobedience of orders.

Albumin in the urine in cases of small-pox, unless the amount is excessive, does not portend evil, although such cases must be watched, for manifestations of kidney involvement. I have found albumin in the majority of those cases where urinalysis has been made; in two cases death was directly due to kidney affection and not to small-pox, notwithstanding the disease in each instance was of the confluent variety, with high temperature.

One case terminated in apoplexy, accompanied by facial paralysis. The pustules in this case were numerous, being confluent upon the face and scalp, semi-confluent upon other parts of the body; they did not reach to proper size, but remained flat, and assumed a grayish color. At the expiration of thirty-six hours after the stroke death occurred, with stertorous respiration.

Hemorrhage following miscarriage caused one death by reason of deficient power of coagulation of the blood; this want of coagulability prevents death from heart clot.

Sudden death occurred in six cases; these were of the malignant or hemorrhagic variety of the disease, and I can only explain them upon the theory of systemic saturation with variola poison.

It was necessary to restrain three patients with straps until death, to prevent injury to other patients or the attendants, for some of these patients are temporarily possessed of almost incredible strength, and straps become an absolute necessity.

Temperature may have no influence upon the course of the disease, for my last fatal case had a registration of 100° only, while one other drove the mercury to the top of the column, 111°.

The term hemorrhagic small-pox does not include those cases where small amounts of blood are thrown out into the pustules; it embraces those cases only where blood is expectorated, is discharged from the urethra, the rectum, the vagina, the nose, and into the mucous membranes. The pocks have usually a purplish hue from the beginning.

Dr. Woodward said that he had enjoyed Dr. Eliot's paper and had profited by it. The writer had had a wide experience in small-pox, and could speak with authority. Dr. Woodward, however, thought that the statements in regard to the day of death in fatal cases must be based only upon Dr. Eliot's personal observation and were entirely empirical. Fatal termination in the disease was due to the severe toxemia or to involvement of the respiratory or digestive tract. In severe cases, he believed that death may be looked for at any time after the ninth day. He said it was incredible how sick a small-pox patient may be and yet recover. It is in these instances that an experienced physician, careful nursing, and hospital care count for so much, and the community had cause for congratulation in having Dr. Eliot for this service. From the standpoint of the community, however, Dr. Woodward was most interested in the mild cases. The severe cases are recognized early and are promptly isolated; but in the mild cases the diagnosis may be greatly delayed, and it is in these instances that the contagion may be widely spread and the danger to the community increased. The consideration of small-pox is important in every aspect, but the most important point is its early recognition.

In regard to enforced hospital treatment of small-pox, he said that to friends and relatives it seemed often very harsh to take a critically-ill small-pox patient away to isolation, and especially so when the issue proved fatal. But if the family could know the frightful condition of the patient at death, and could realize how little they could do to relieve the suffering, they would be thankful to be relieved of the burden. In spite of sentiment and the natural revolt against letting a loved one die among strangers,

if the conditions at death could be realized any family would be grateful for the isolation law.

Dr. G. W. Wood said that several years ago he worked up the health office reports of Cincinnati for the Committee on Public Health of the Medical Society, to find out the effectiveness of quarantine in relation to contagious diseases. He was struck by the fact that in the health office reports of that city the mortality from small-pox dropped greatly and simultaneously with the application of municipal control in all small-pox cases. His search in the literature seemed to establish the fact that the absolute control of small-pox by city government not only lessens morbidity, but also greatly lessens mortality. He agreed with Dr. Woodward in regard to the great advantages of enforced segregation.

Dr. Jas. Dudley Morgan said that the few cases of small-pox that had come into his hands he was always very glad to turn over to Dr. Eliot. As the paper was upon fatal cases, Dr. Morgan would content himself with asking Dr. Eliot if in severe cases he used hydrotherapy for hyperpyrexia and delirium? if in pneumonia, he used the ice-bags to the chest? if in uremia, he used hot-air or steam baths, pilocarpin, salt solution, and the various other agents used for like conditions in general practice?

Dr. Truman Abbe said that much had been written upon the benefit derived from keeping small-pox patients in red light. He asked Dr. Eliot if the method had been used by him; and if so, with what results?

Dr. A. F. A. King asked what was the average percentage of mortality from small-pox at the present time, and wished to know from how many cases Dr. Eliot had derived his conclusions. He doubted if the mortality at present reached the 30 or 40 per cent. of other times.

Dr. Kober said that he had been in California during an epidemic of small-pox in 1892. He had looked up the literature of the subject, and had found that the mortality in the hemorrhagic form was 95 per cent.; in the confluent form 35 per cent.; while in the discrete variety the death rate sank to only 7 per cent. Thus cases were seen to vary much in degree; in the hemorrhagic form we were dealing with an everwhelming toxemia. In fatal cases, examination of the heart muscle would show a greater or less degree of fatty degeneration, evidence of the toxic principle circulating in the blood. The chances of a small-pox patient depended upon the ratio of resistance to toxemia. Death was caused by heart failure, and, as the danger lay here, the treatment ought to be directed toward the support of the heart.

Dr. Eliot, in closing the discussion said that every case of small-pox is dangerous, whether it be varioloid or hemorrhagic. Small-pox is elective as well as selective. At one time a whole family might be prostrated, at others, one member might be stricken and

not another. He had seen a case of small-pox taken from a house containing forty inmates without another case developing. He agreed that the mild cases cause the most trouble to the Health Authorities. The confluent form, however, was at times mistakenly called by the practitioner syphilis, impetigo, etc.

After the Health Department assumes charge of these patients he finds that the disposition of relatives is to believe that nothing was wrong if patients get well, and that they were not properly treated if they die. The Health Department regulations should be most stringent in regard to isolation. He commended the law of one of the Alabama counties which requires the owner of premises harboring small-pox to give bond in the sum of $500 for the proper observance of the law, and also to meet all the expenses incident to the maintenance of quarantine. He said he believed hydrotherapy to be good practice for the relief of high fever and delirium in other diseases, but not in this. In the early stages of small-pox, cold bathing retards the appearance of the eruption, and later on the condition of patients is too repulsive for handling.

He would estimate the mortality of small-pox at about eight or ten per cent. The estimate of the Surgeon General's office of 95 per cent. mortality in the hemorrhagic form may be correct, but he questioned any recovery from this form. He called hemorrhagic those cases only which present purpuric extravasations, with bleeding from the mucous surfaces. He believed that all such invariably die. He said that the hospital had no facilities for trying the red light treatment. A few years ago he had covered the windows with a red fabric and had put red shades on the gas fixtures, and with this primitive arrangement had treated seven cases. He thought that some benefit had been derived from the method. The hospital attendants had complained of headache and giddiness while working in the red light. In the Municipal Hospital, Philadelphia, this mode of treatment has been tried in a few cases and abandoned.

AN IMPROVED FLUOROSCOPE.*

By F. P. VALE, M. D.,

Washington, D. C.

Dr. Vale said that the profession was just awakening to the fact that the *x*-rays, beside the well-known burn, were capable of producing other injurious effects. Interest had been aroused especially by the recent announcement of Dr. Tilden Brown, of New York, that there existed in *x*-ray workers an azoöspermia. His

*Remarks made before the Medical Society of the District of Columbia, November 1, 1905.

investigations were undoubtedly instigated by the experiments of Albers-Schoenberg, reported October, 1903, in the *München Med. Woch.* This celebrated radiographer of Hamburg found that after exposing male rabbits to the *x*-rays during varying periods they were unable to procreate, though their sexual proclivities and ability to copulate remained normal. That other changes were brought about by the rays, equally obnoxious, was highly probable. Personally, Dr. Vale always suffered from a headache after a short use of the ordinary fluoroscope, so that he was at once interested in the improvement described by Dr. Johnston, of Pittsburg, a couple of months before. As shown in the fluoroscope he exhibited, the fluorescent screen was placed at the side of the box, instead of at the end; opposite the screen was fixed a mirror, at such an angle as to reflect the image to the examiner's eyes. The operator could thus stand at one side, out of the line of the rays, and if a diaphragm was used in front of the tube, was absolutely protected. A little practice enabled one to interpret the reflected image without difficulty, and since a quarter-inch plate glass mirror had been substituted for a thin, irregular and defective one found in the instrument, it had proved entirely satisfactory.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, October 4, 1905.—Dr. T. N. McLaughlin, President, in the chair; over 52 members present.

The President announced Dr. F. P. Morgan's resignation from the office of Recording Secretary, and Dr. Macatee was elected in his place.

The Corresponding Secretary was instructed to convey to Dr. Morgan the Society's thanks for his long and faithful service and its regret at losing him as an officer.

Dr. D. Olin Leech, for the Board of Censors, reported the following applicants eligible for active membership, and they were elected:

Mahlon Ashford, Georgetown University, 1904; Wm. G. Erving, Johns Hopkins University, 1902; Wm. H. Hough, Georgetown University, 1904; H. R. Hummer, Georgetown University, 1899; B. Rush Logie, University of Maryland, 1890; Francis A. Schneider, College P. and S., New York, 1901; F. Fremont Smith, University of Pennsylvania, 1883.

Dr. Thos. A. Claytor read the paper for the evening, on "For-

eign Bodies in the Bronchi." Discussed by Drs. C. W. Richardson, Jas. Dudley Morgan, Frank Leech, Wilkinson, Ramsburgh and Balloch.

Wednesday, October 11.—Dr. McLaughlin, President, in the chair; over 48 members present.

The resignation from membership of Dr. Anita Newcomb McGee was accepted.

Dr. G. W. Wood reported a case of Uterine fibroid, and presented the specimen from the case. See p. 285.

Dr. I. W. Blackburn read the paper for the evening. Subject, "Gross Morbid Anatomy of Cerebral Arterio-Sclerosis." Discussed by Drs. D. S. Lamb, Nichols, Bishop, King, Wood and R. S. Lamb. A vote of thanks was given Dr. Blackburn.

Wednesday, October 18.—The President, Dr. McLaughlin, in the chair; over 48 members present.

Dr. Oscar Wilkinson read a paper, "The Preventive Treatment of Senile Cataract." Discussed by Drs. Butler, Belt, Polkinhorn, R. S. Lamb and Kober. See p. 286.

Dr. Llewellyn Eliot read a paper on "Fatal Cases in Smallpox." Discussed by Drs. Woodward, Wood, James Dudley Morgan, Abbe, A. F. A. King and Kober. See p. 310.

Wednesday, October 25.—Dr. McLaughlin, President, in the chair; over 46 members present.

Dr. James Dudley Morgan reported a case with specimen of Multiple abscesses of the liver, with pylephlebitis and abscesses in the head of the pancreas. Discussed by Dr. D. S. Lamb. See p. 296.

Dr. Edw. A. Balloch read the essay for the evening: Subject, "Colles' Fracture." Discussed by Drs. J. Ford Thompson, Borden, James F. Mitchell, Neff, Vale and Jack. See p. 273.

Wednesday, November 1.—Dr. McLaughlin, President, in the chair; over 70 members present.

Dr. F. R. Hagner reported the following cases with specimens:

1. Gangrene of the testicle following a blow. Discussed by Drs. D. S. Lamb and Blake.

2. Alveolar sarcoma of the kidney. Discussed by Drs. D. S. Lamb and Balloch.

Dr. E. A. Balloch reported a case of Periappendical abscess, with specimen. See p. 309.

Dr. F. P. Vale exhibited and described a new fluoroscope. See p. 314.

Dr. I. S. Stone read the paper for the evening: subject, "Cholelithiasis, or Gallstone Disease." Discussed by Drs. Thompson, Stokes, Fremont-Smith, Frank Leech, Vale, Hasbrouck, Borden and Randolph. See p. 298.

WASHINGTON MEDICAL ANNALS.

Journal of the Medical Society of the District of Columbia.

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Editorial.

The delay in the issue of the present number is partly due to the fact that members do not always return promptly to the Secretary the copies of remarks made in discussion, sent to them for verification.

Exception has occasionally been made by a member to some statement in the printed "Proceedings." The editorial committee would be pleased to have the members of the Society look over the "Proceedings" in the present number, and notify the chairman of the committee of any criticism they would make.

The following announcement from Dr. E. L. Keyes, Jr., New York City, the Secretary, is necessarily *post facto:*

"Will you kindly insert in the next issue of your JOURNAL the programme of the October meeting (October 12) of the Society of Social and Moral Prophylaxis, as follows: 1. Should the youth of the country be educated in a knowledge of Sexual Physiology and Hygiene? 2. What should be the nature and scope of this education? 3. At what age should this instruction be given, and should it be progressive according to the age of the individual? 4. Through what agencies should this instruction be given—through parents, physicians or teachers? Should our educational centers—high schools, colleges and universities—be utilized for this purpose? 5. Should the teaching of Sexual Physiology be incorporated in our text-books of Elementary Hygiene? As the educational feature of the Society's work is an important one, the Executive Committee would be glad to have a general expression of opinion from the medical profession as to the availability and practical value of this proposed education. Physicians who have given serious thought to the subject are invited to send to the Secretary their views upon any or all of the questions submitted for discussion. Such communications will be analyzed and tabulated and form the subject of a report by the Committee on Education."

Medical Miscellany.

Multiple Fibromata in an Eel.—Eels in roe are rarely seen and the Bureau of Fisheries frequently receives specimens alleged to be the eggs of the eel. The last arrival of this sort was two rather oblong masses of fibroid tumors. One of these, about 2 cm. long and 1 cm. wide was attached firmly to the outer wall of the intestine. The other, somewhat larger, hung from the first by short bands of connective tissue. Both weighed, as preserved, 2.3 grams. Each mass consisted of 30 to 40 distinct tumors of various sizes and shapes, some less than a millimeter in diameter while the largest were 7 or 8 mm. in their longest dimension. They were held compactly together by a matrix of connective tissue and the whole mass invested by a strong membrane.

The occurrence of fibromata in fishes is not uncommon, and their origin is as little known as is that of tumors in general.

M. C. Marsh.

Transposition of Viscera.—A Note.—The report in the September edition of the Annals of two cases of this anomaly by Doctors Randolph and Thomas is exceedingly interesting, especially as the diagnosis was made ante-mortem, and as such cases of gross anomalies are comparatively rare. They are, however, not so uncommon as Dr. Randolph would lead one to believe, as he states that he has been able to find the report of but one autopsy case, that of Dr. Koller, of Zurich, in 1899. I call attention, therefore, to the statistics on the subject given by Doctors Frank Baker and D. S. Lamb in their discussions of Dr. I. W. Blackburn's case, which was presented before the Medical Society of the District of Columbia, May 12, 1902, and reported in the Annals, Vol. 1, No. 2, 1902. Dr. Adams called attention to this case. Dr. Lamb mentioned Guttman's collection of one hundred cases, and Dr. Baker stated that there are three hundred cases now on record in the Library of the Surgeon General's Office. Dr. Blackburn's specimen is now in the Anatomical Museum of the Government Hospital for the Insane.

Wm. H. Hough, M. D., *Govt. Hospital for the Insane.*

Names of those who attained the percentage necessary to entitle them to a license to practice medicine in the District of Columbia, at the last examination held for the purpose, October 12, 1905.

Doctors Charles L. Billard, Rhodric W. Brown, Richard L. Cook, Harold E. Dunne, Edward H. Egbert, William B. Harrison, William B. Hudson, Arthur L. Hunt, Charles W. Hyde, Willis W. Jones, Joseph J. Kaveney, Thomas Linville, William B. Mason, Simon W. Merritt, Robert H. Olesen, Henry P. Parker, Timothy J. Sullivan, Richard F. Tobin.

W. C. Woodward.

Memorandum showing the relative prevalence of certain communicable diseases from July 1, 1904, to November 1, 1904, and the same period of 1905.

DIPHTHERIA.

1904.			1905.		
Cases on hand July 1, 1904..	13		Cases on hand July 1, 1905..	8	
Cases reported from July 1, to Nov. 1, 1904.....	175		Cases reported from July 1, to Nov. 1, 1905.....	126	
Cases discharged, recoveries		100	Cases discharged, recoveries		86
Cases discharged, deaths.....		23	Cases discharged, deaths.....		16
*Per cent. of fatal cases.....		18.7	*Per cent. of fatal cases.....		15.6
Cases on hand Nov. 1, 1904..		65	Cases on hand Nov. 1, 1905..		32
Total cases.....	188	188	Total cases.....	134	134

SCARLET FEVER.

1904.			1905.		
Cases on hand July 1, 1904 ..	18		Cases on hand July 1, 1905..	24	
Cases reported from July 1, to Nov. 1, 1904.....	120		Cases reported from July 1, to Nov. 1, 1905.....	45	
Cases discharged, recoveries, ...		98	Cases discharged, recoveries		54
Cases discharged, deaths.....		3	Cases discharged, deaths.....		.....
*Per cent. of fatal cases.....		2.9	*Per cent. of fatal cases.....		.....
Cases on hand Nov. 1, 1904..		37	Cases on hand Nov. 1, 1905..		15
Total cases.....	138	138	Total cases.....	69	69

TYPHOID FEVER.

1904.			1905.		
Cases on hand July 1, 1904...	45		Cases on hand July 1, 1905..	31	
Cases reported from July 1, to Nov. 1, 1904.....	684		Cases reported from July 1, to Nov. 1, 1905.....	808	
Cases discharged, recoveries, ...		404	Cases discharged, recoveries		574
Cases discharged, deaths.....		80	Cases discharged, deaths.....		95
*Per cent. of fatal cases.....		16.5	*Per cent. of fatal cases.....		14.2
Cases on hand Nov. 1, 1904..		245	Cases on hand Nov. 1, 1905..		170
Total cases.....	729	729	Total cases.....	839	839

SMALLPOX.

1904.			1905.		
Cases on hand July 1, 1904..			Cases on hand July 1, 1905..	4	
Cases reported from July 1, to Nov. 1, 1904.....	2		Cases reported from July 1, to Nov. 1, 1905.....	25	
Cases discharged, recoveries, ...		1	Cases discharged, recoveries		23
Cases discharged, deaths.....		1	Cases discharged, deaths.....		2
*Per cent. of fatal cases.....		50	*Per cent. of fatal cases.....		8
Cases on hand Nov. 1, 1904..		.....	Cases on hand Nov. 1, 1905..		4
Total cases.....	2	2	Total cases.....	29	29

*The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

W. C. WOODWARD.

THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA

(CHARTERED 1819 AND 1838)

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Vol. IV. JANUARY, 1906. No. 6.

WASHINGTON MEDICAL ANNALS

PRESIDENTIAL ADDRESS.*

By THOMAS N. McLAUGHLIN, M. D.,

Washington, D. C.

To the Members of the Society:

I wish to express to you my deep sense of appreciation of the compliment which you paid me in conferring upon me the highest honor in electing me President of this Society, and also to thank you for the loyal support extended to me by all the members during my term of office.

It is my pleasant duty to address you tonight, and I shall first refer to those matters appertaining to the welfare of the Society, and later to a subject of vital importance to the general public as well as to the medical profession.

The average attendance of the weekly meetings has been 51. Out of a membership of 370 this appears to be a small representation. Nearly all the members who attend these meetings with any regularity are from the northwestern section of the city. Occasionally a few from the eastern and southwestern sections are present. Now, it is believed that a greater number will attend if our place of meeting is more centrally located. I am authorized to say that the George Washington University Building, Fifteenth and H Streets, Northwest, may be procured for these meetings under the same favorable conditions which now exist. The main hall of the building is large, well ventilated, and admirably arranged for our purposes; besides, being within one square of all the car lines in the city, it would be accessible to the members.

The question of subdividing the Society into sections has been seriously considered, and we have concluded that there are other means of maintaining an active interest in the proceedings without resorting to this radical change. If sections are formed

* Delivered, December 13, 1905, before the Medical Society of the District of Columbia.

it is feared that only those interested in the special line of work under consideration at that meeting would attend, but if we make the Society a general clearing house, where everything of a scientific character relating to medicine is welcome, we shall all find something of value and special interest to us by being regular attendants.

A number of the younger members should be selected to review the progress made during the year in the different specialties and in general medicine. This will afford the members an opportunity of becoming conversant with the latest work in the advancement of medical science, which should prove to be of the greatest benefit. These papers should be presented each month, alternating with the essays. The following assignment has been made for 1906:

January, Ophthalmology, Laryngology and Otology, Dr. Polkinhorn.

February, Dermatology, Dr. Samuel Fry.

March, Bacteriology, Dr. H. H. Donnally.

April, Pediatrics, Dr. T. S. D. Grasty.

May, Surgery, Dr. W. A. Jack.

October, Medicine, Dr. T. N. Vincent.

November, Nervous Diseases, Dr. W. L. Robins.

December, Gynaecology, Dr. J. Lewis Riggles.

No scientific paper presented to the Society should exceed in its delivery twenty minutes, and the presentation of a case or pathological specimen should be limited to ten minutes. In discussion, no member should be permitted to speak longer than ten minutes, nor a second time on the same communication, except in the case of the member presenting it, who should be entitled to close the debate; provided, however, that the time allotted to the reading of a paper, or the presentation of a case or pathological specimen, may be extended, or a member permitted to speak longer than ten minutes, or more than once, by a vote of the Society.

Two or three papers of ten to twenty minutes each are best for each meeting. Symposia are of value occasionally, and should lead to interesting and profitable discussions.

We should all feel highly gratified at the success which the editors of the MEDICAL ANNALS have achieved. Every department has been ably conducted. The character of the advertisements is above criticism, besides the increase in revenue from this

source has made the journal nearly self-supporting. We should give the editorial staff every encouragement, and make them feel that the great sacrifice of time and energy which they are making for its success is fully appreciated by every member of the Society.

When an author wishes to publish his paper elsewhere he should be required to furnish the Editorial Committee in advance with an abstract. To publish the title of a paper and the discussion which follows without any of the subject-matter, is a reflection upon the members of the Society, and should not be tolerated.

Matters of a private character which should be discussed only at the Society meetings, and then be considered confidential, are sometimes published under the heading "Society Proceedings," in the MEDICAL ANNALS. The danger of doing harm increases with the growth of the JOURNAL each year, and we cannot be too careful to avoid what may prove embarrassing to the Society and humiliating to outsiders. It is therefore recommended that no report of the business proceedings of any meeting shall be made for publication, except where specially authorized by vote of the Society.

It is believed that greater interest in the proceedings may be obtained by limiting all business matters to the first meeting of the month and confining the other meetings to strictly scientific work.

It is the custom to invite four men annually, eminent in medicine, to address the Society, and the invitation should be extended as the greatest compliment which we can offer. Many of those who have addressed the Society heretofore have paid their own expenses or have been entertained by some member. It does not seem right to have the guests of the Society, who generally have to make sacrifices to be present and address our members, pay their own way. The cost of taking care of the guests would hardly reach the sum of $100 in a year. Carfare, one day at a hotel, a carriage to and from the place of meeting, would not amount to a great deal. It is recommended that the Treasurer of the Society be authorized to honor the requisitions of the Essay Committee for a sum sufficient to meet the actual expenses of such gentlemen as may consent to favor the Society with papers during the coming year. For various reasons, such as sickness at

home, lack of facilities, etc., it is not at all times convenient for the President to entertain the guests; but with this precedent established, there will be no difficulty in the future in making such arrangements for the entertainment of our guests as shall be in keeping with the dignity of this organization.

THE POLLUTION OF THE POTOMAC RIVER AND ITS DANGERS.

The fair name of our beautiful city has suffered during the present year on account of the free discussion in the public press of the many cases of typhoid fever which were reported. The impression prevails that the water supply is contaminated, and that these fevers and intestinal disturbances are due to that cause. Every few days we were told to boil the water, for it was dangerous to drink it without that precaution; at the same time a report of the number of new cases of typhoid fever and deaths was published.

Persons became alarmed about those related to them who were compelled to reside here, and those out of town were afraid to return. The health of a city depends upon its water supply, and improves or diminishes as the purity of the water changes.

Now, for the purpose of ascertaining to what extent the Potomac River is being polluted, you are invited to go on a tour of inspection. Let us examine the conditions as they exist, and if we find that the source of the water supply is being made a menace to public health through carelessness, indifference or neglect, then it is within our province to suggest means for correcting this evil, and our duty to see that proper regulations are enacted and enforced.*

This map shows the watershed drained by the Potomac river. It will be seen that large areas of Virginia, West Virginia and Maryland feed its tributaries; Pennsylvania, to the north, is also drained in part by the Potomac system of waterways, but its drainage area is not shown in the map here presented. It may be seen that the water which flows by Washington is derived in large measure from the North and South branches of the Potomac, and from the Shenandoah, which enters the main stream at Harpers Ferry. The Shenandoah flows through the Valley of Virginia, which is for the most part an agricultural region and does

* The remainder of the address was illustrated by lantern slides.

not afford serious pollution to its drainage water. The South branch of the Potomac flows out of the mountains of West Virginia, the hills of which are given over to the farmer and the lumberman. Its waters are as yet not badly polluted, and in a good stage of water it is a most beautiful stream. To preserve its beauty and its purity surely demands our earnest endeavor. The North branch of the Potomac, flowing out of Western Maryland and draining parts of West Virginia and Pennsylvania, is the most dangerous source of pollution to our water. It flows by large centers of population, its drainage area contains many manufacturing establishments, and numerous mines are to be found upon the slopes of the hills among which it flows. Thus the North branch of the Potomac receives domestic waste, industrial waste and mine waste in large quantities.

The South branch of the Potomac and the Shenandoah may then be dismissed with a few words and a picture or two to show the character of the streams : Here is presented a view of the South branch of the Potomac, taken near Springfield, West Virginia. As has been said, it flows through regions given over to farming and logging, and has not yet become badly polluted. It is a wonderfully beautiful stream in good water and flows out of a wonderfully beautiful country.

The next picture gives an idea of the general character of the Shenandoah River ; the confluence of its North and South branches may be seen. Nowhere along this river is there any serious pollution by industrial waste, nor is there any mining of consequence in the Valley of the Shenandoah ; but many towns and villages empty their domestic waste directly or indirectly into its waters. At Harrisonburg a sewerage system has been constructed and the sewage finds its way to the Shenandoah River through the Black Hawk Run. The other towns are not provided with sewerage systems, but when such are finally constructed their natural outlet will be the Shenandoah River.

Returning now to the North branch of the Potomac, let us see what are the conditions that contribute so much filth to the waters of the river. The character of this stream may be seen in the pictures which follow : This picture shows the Savage River, which flows into the North branch somewhat above Luke, Maryland. It constitutes the water supply for Piedmont and Westernport. Its drainage area is largely inhabited, but the water of the

river is in fair condition and the towns supplied by it do not experience any trouble from its use in the raw state.

The next shows the North branch before the confluence of the Savage River. It is polluted by large quantities of mine waters and by domestic waste.

Next we see the character and size of the North Branch after the confluence of the Savage River.

One of the most important of the pollutions of the North Branch is next seen. The buildings shown are the mills of the West Virginia Paper Company, at Luke, West Virginia. The mills have been rebuilt and enlarged since this picture was taken. Here are discharged large quantities of lime-sludge and wood-fiber into the river. The pollution is corrected somewhat by the lime waste combining with the acid waters of Georges Creek, which enters the North branch at Westernport, Md., the site of the next picture. This creek receives enormous quantities of mine-waste water, which combines with the lime-waste from the paper mills, forming a precipitate which seems to clarify the water in a measure and to act as a germicide. This fact has been held as accounting for the good quality of the water supplied to Cumberland, which city feeds its water mains from the North branch, some 30 miles below Westernport. In this picture may be seen privies emptying into Georges Creek, and near this point two sewers discharge into the stream.

Georges Creek, before mentioned, is polluted by its small tributaries; one of these is here shown at Lonaconing. Here may be seen privies overhanging the stream. The waters of this little creek are polluted with mine-waste, and the rocks of the creek bed are stained yellow with deposits of iron oxide. In this connection it may be interesting to say that streams into which any considerable amount of mine water flows are entirely barren of fish life.

Higher up on the North Branch, at Keyser, West Virginia, you may be interested in observing a different form of pollution. This picture shows the Patchett Woolen Mills in that town; from this source large amounts of wool scourings and spent dye liquors are allowed to flow into the stream by way of the drain, the situation of which is well marked by the dark line across the snow.

Cumberland, Maryland, contributes very largely to the general unsavory condition of the river, as will be seen in the pictures which follow. First is presented a map of the water courses in and

about Cumberland. The facts more particularly to be noted are that two streams may be seen to flow through the town, and that one, Wills Creek, flows into the Potomac, and the other, Beal's mill race, enters the Chesapeake and Ohio canal. Beal's mill race, so called because it formerly conducted the waterpower to Beal's mill, has degenerated into a sluggish stream, which is an open and public sewer.

Next is seen Dam No. 8, at Cumberland, which is for the purpose of diverting water into the canal at the point to the right, where masonry may be seen and where are situated the head gates of the canal. A short distance above this site Wills Creek enters the river, and its waters naturally pass in at the canal gates immediately below. The river is at a medium stage of water.

The character of water which Wills Creek contributes to the Potomac may be inferred from the next picture, in which numerous privies are to be seen overhanging the creek, and from the statement that in this neighborhood slaughter houses are drained into the same channel.

Next is seen the general character of Beal's mill race; from the privies overhanging the stream and from industrial plants along this water course, a very foul current of filth finds its way to the canal.

Some idea of the condition of the river at Cumberland may be reached by examining the next picture. The men in the boat are engaged in taking dead fish from the river by means of dip-nets; the dead fish were so numerous at one time that the city authorities had to resort to this method to remedy the nuisance. Unfortunately, much more expensive and complicated means must be used by us to obviate the unseen and more dangerous nuisances.

The part that Beal's mill race at Cumberland plays in the pollution of the Potomac may be next seen where the canal above dam No. 5 flows into the river. Thus we see that not only all the sewage of Wills Creek, but also that of Beal's mill race, is finally diverted into our own water supply.

It may be interesting to note how the water of the canal may do damage *en route* to us. The next picture shown portrays the type of scenery along the line of the canal below Cumberland. Upon the bluff there is a small farmhouse, and a rude derrick has been erected over the brink by which the farmer hoists his supply of water from the polluted canal below.

Thomas Jefferson, in his writings, referred to the beauty and the grandeur of the scenery at Harpers Ferry, and said that it was worth a journey across the ocean to behold such a magnificent view of rivers and mountains. In any European country every effort would have been made to maintain the natural beauty of the place. Thousands of strangers each year visit this historical region, for one of the largest railroads to the West follows the course of the Potomac.

The waters of this section were famous for years for the excellent game fish which they contained, but when the authorities permitted the owners of the pulp mills on the Shenandoah and Potomac to throw the shavings into the stream it was only a short time before the fish were driven away, and the place became an object lesson, showing the necessity for a central power, which could take the initiative and correct the abuses tolerated by the powers of the three States. In May last the mill owners stopped the abuse, which had continued for several years, and this fall the bass fishing has been exceptionally good.

We owe a debt of gratitude to the members of the Fish and Game Protective Association of this city, for they have been instrumental in bringing about all the reforms which have been accomplished. When we pause to consider how stupendous the task appeared at the beginning we are filled with admiration for this small body of earnest and enthusiastic workers. The laws of the District of Columbia, Maryland, Virginia and West Virginia had to be made as near alike as possible, so as to obtain concurrent action in enforcing all violations. This required work in Congress and in the legislatures of the three States mentioned, but by patient and persistent effort the association succeeded in having new laws enacted, which today should be of great assistance to us.

Brady's pulp mill, which is next shown, is a mill for the manufacture of wood pulp for conversion into paper. As a preliminary step the logs which are to be macerated into pulp are run through a machine which strips them of their bark. As the mill is run by water power, there is no further use for the bark fragments, as for fuel, and for economical reasons they were allowed to drop into the river.

The next view appeals to all of us—it shows how Nature had

expended with wasteful profusion her attractions which should for all time be a delight and pleasure to us.

The next three views show how the hand of man had improved upon Nature, and converted a scene of beauty into a most foul and rotten mass, for these shavings filled all the pools, and the entire river bed, and continued to arrest the filth which flowed down the stream.

There has been an exceptional flow of water this year on account of the heavy rains, and a large amount of this mass has been washed away to other sections. It will take years to get rid of this deposit.

The next view shows what has been accomplished since last May in removing this source of pollution.

Before returning, we may pause for a moment to observe how our water is polluted through Carroll Creek and the Monocacy, from Frederick, Md.

Here may be seen a tannery, with the lime-waste from the vats thrown carelessly upon the banks of the stream. This refuse, is of course, washed down into the stream by every rain, and with every freshet large amounts are borne bodily away by the torrent.

In the next picture we see the dye-waste from a knitting factory at Frederick discharging into Carroll Creek. The steam from the hot liquor may be seen rising, and the amount discharged may be surmised from the statement that the pigment from this factory at times colors the water of the stream for miles.

Thus we have ocular proof of the abuse of the water streams all over the Potomac water shed. The examples might be multiplied indefinitely, but with these few glimpses at the sources from which our own reservoirs are filled we may return to the matter at hand.

What pleasant memories we can all recall of the many delightful days which we were accustomed to spend along the Virginia banks of the river from Georgetown to the Chain Bridge. Numerous boat houses, from each of which a merry throng of men in boating costume and women attired in the prettiest and daintiest of gowns, were going to and returning from some delightful sylvan retreat along its historical and beautiful banks. Sweet voices filled the air with merry laughter and song, and the decorated boats when illuminated presented a picture which it shall be a pleasure to recall. But today—how different! Those retreats

have disappeared, silence reigns where music held sway, and all the beauty and attractiveness of the place have gone forever. The river is covered with a scum, large sewers and waste-pipes from various manufacturing industries empty all sorts of refuse into the stream. Some of the boat clubs have had to appeal to the courts for protection for their boats from this waste which was destroying their property.

As the water flows down the stream it is further contaminated by the large Seventeenth Street sewer which empties into the river only a few hundred yards from the bathing beach. This swimming pool is extensive in size but the water is only changed with the rise and fall of the tide. Thousands of pleasure seeking men and boys patronize this polluted water. Since swimming in the river is such delightful and healthful exercise and so many indulge each year, is it not probable that many cases of fever result from this source?

It is well known that the ice on a river is purer than the water beneath it, but germs of disease may remain imbedded in the ice for many months, as has been recently proved at Ogdensburg, New York, where infected ice was stored in an ice house for nine months. Numerous epidemics have originated from this source, and one of personal knowledge which occurred at Plymouth, a few miles from Wilkesbarre, Pa., in 1885. This town of 8,000 inhabitants was supplied with water from a mountain stream. In January a miner suffering from typhoid fever occupied a cottage on the banks of this stream. He was nursed by a fellow workman. The stools from this patient were thrown out upon the snow, where they froze and did no harm until April, when, with rain and thaw, the ice melted and ran into the reservoir furnishing the town with water. Over 1,200 cases with 130 deaths resulted from this infection.

When oysters are placed in fresh water for the purpose of fattening them there is danger of infection if the water is polluted. The typhoid bacillus lives for 7 to 30 days in raw oysters, and in sterilized sea water for 25 days. Since there is such a demand for this delicious bivalve, we should devise means for its protection. A number of epidemics in this country and in Europe have been traced to this source of infection.

The propagation of oysters has become such an important industry that means for its protection are receiving active consider-

ation, and its possibility as a means of conveying infection has attracted the attention of various official bodies which are striving to establish sanitary reforms. In this connection it will be interesting to quote a portion of a recent editorial in the *Journal of the American Medical Association*, "Oysters and Typhoid Fever," since it is along the very lines we wish to recommend :

"Industrial developments are continually giving rise to new and previously unsuspected opportunities for infection, and the task of the modern sanitarian is plainly one calling for eternal vigilance. The rigorous exclusion of sewage from some public water supplies and the filtration of others has diminished measureably the danger of typhoid-fever infection from drinking water; but while these reforms have been vigorously urged, another source of typhoid fever has been steadily increasing in importance. Over 25,000,000 bushels of oysters, valued at about $12,500,000, were marketed in the United States in 1902. The location of oyster beds in sewage-polluted estuaries is evidently a matter for real concern.

"In Great Britain various official bodies have taken up the subject with the zeal usually shown in that country in the prosecution of sanitary reforms. In certain respects the sanitary regulation and control of the shellfish industries presents numerous difficulties, and the problem is a complicated one. The fourth report of the Royal Commission on Sewage Disposal recommends the establishment of a new central authority equipped to investigate all phases and standing in direct relation to the proper executive bodies.

"It is unfortunate that the situation in the United States in regard to the oyster industry is not one in which a central control can be well exercised. Consumers of raw oysters at present are quite at the mercy of oyster dealers, presumably of varying degrees of intelligence and conscientiousness. There should be some means of preventing the distribution of sewage-saturated oysters in any part of the country. Is this not something that the Public Health and Marine Hospital Service should take up?"

It is known that the Potomac water contains intestinal bacteria all the time, and when we stop to consider that Cumberland, Harpers Ferry, Frederick and the many villages use the stream for the purpose of carrying off their sewage, thus practically making a sewer of the river, we can readily explain the large percentage of the typhoid and other intestinal diseases which occur so frequently in this city. In the investigations made by the Marine Hospital Service there was an average of over 1,000 organ-

isms to a teaspoonful, and these studies were made with water from a faucet in the laboratory, which had the benefit of sedimentation, but was such as was being distributed to all consumers in their houses. In samples obtained from the head waters of the Potomac intestinal organisms were found in over 90 per cent. Since it takes only four days for the polluted water at Cumberland to reach this city we can appreciate the danger to which we are exposed. It has been observed when typhoid fever prevailed to any extent at Cumberland and at other settlements along the river that there was a material increase in the number of cases reported in this city within a few weeks.

It is a popular impression that a river will purify itself by aeration and sedimentation, but Dr. Sprague, in his investigations of the river, reports "that the samples of water taken at various places in the Potomac basin do not show a diminution in the colon group, but a relative increase as we approach Washington. This fact alone would be sufficient to demonstrate the fallacy of self-purification of a stream."

During this year from April to August the river was muddy nearly all the time. The watershed covers an area of 11,000 square miles, according to the report of the Hydrographer of the Geological Survey, and extends into Pennsylvania, West Virginia, Virginia and Maryland. This large surface yields an enormous amount of water during the rainy season, and Theobald Smith has found by bacteriological investigations that turbidity of the river and increase in germs are coincident.

This is due to the mud from the farms and river banks which is washed into the stream containing fecal matter from the towns, barnyards, cesspools and outhouses, together with refuse from tanneries and mines.

It is claimed that our present plant is not large enough to furnish the City of Washington with pure water, and that it may be necessary to introduce mechanical filtration in addition. It is not my intention to give you a lengthy dissertation upon the merits of copper, alum and sand purification of water. There are advocates of each of these methods. W. Gilman Thompson, a distinguished clinician, in a recent publication says that "filtration of water is a delusion, giving a sense of false security against infection, and it should never be relied upon exclusively when drinking water is known to be contaminated." "Yet it is not

without effect, as shown in the city of Lawrence, Mass., where the mortality was reduced from 12.3 per 10,000 in 1890 to 5.0 per 10,000 in 1894, after the installation of a filter in the water supply during 1893."

Harrington says that the Lawrence filter removes 97.50 per cent. of the organisms present in the water as delivered, and 99.17 per cent. is recorded at the house service pipes, the increase in purification being supposedly due to the fact that their necessary food material has been removed, and hence they cannot long survive. At Hamburg, Altoona, Stuttgart and London the reduction in bacteria is about the same at as Lawrence.

The following tables* which I have selected show what has been accomplished in other cities by improving the water supply. Fig. I shows the mortality in Chicago from typhoid fever. In 1891 and 1892 the water was contaminated with sewage and the death rate was about 1 to 450 or 500. With a change in the water supply the mortality has fallen to 1 to 6,000 or even 1 to 9,000. Fig. II shows the mortality from typhoid fever in Berlin. Before the water supply was filtered, in the decade 1843 to 1853, the average mortality was 1 per 900 inhabitants. Fig III shows the much diminished mortality from typhoid fever in Berlin after the drinking water was filtered.

While we observe what excellent work is accomplished by filtration, there are several points in this connection which we must consider. The successful operation of any filtration system depends upon the care, trustworthiness and experience of those employed to manage the system. The degree of purity of the filtered water is influenced by the length of time allowed for sedimentation to take place, and the amount of pollution of the water, and its turbidity.

Some idea of the increase of pollution of the Potomac River which may be expected with the passage of time may be gained by inspecting the table† here presented, which shows the increase in population of the towns situated in the Potomac basin in the decade 1890 to 1900.

If the supply of water becomes deficient, if the process of filtration is hurried or improperly managed, danger of infection imme-

*The tables are not reproduced, but the results are stated.

†Not reproduced; the increase was altogether 27.7 per cent.

diately arises. As the pollution increases so must the expense of making and maintaining new beds.

For the purpose of stopping the pollution of the Potomac River as far as is possible, by carefully watching and protecting the watershed, diverting the sewage to other channels, thus providing for its disposal, as well as preventing infection from the other sources mentioned, the following recommendation is made :

That the Executive Committee be instructed to invite the District Commissioners, Surgeon General of the Marine Hospital Service, Chief of Bureau of Hydro-Economics, Geological Survey, President of the Game and Fish Protective Association, President of the Board of Trade and President of the Business Men's Association to a conference for the purpose of preparing a bill to prevent the pollution of interstate waters, this bill to be presented to Congress.

After many years of thoughtful consideration of this subject, including a study of the laws of other countries governing this matter, as well as a careful investigation of the conditions and requirements at home, a bill has been prepared by those thoroughly qualified and trained to do such work. This bill, perhaps with certain modifications, may meet all requirements ; at any rate, it will be submitted to the committee for consideration, and will prevent unnecessary delay.

I wish to acknowledge my indebtedness to Mr. Marshall O. Leighton, of the Bureau of Hydro-Economics, to the Executive Committee of the Game and Fish Protective Association, and to our valuable Secretary, Dr. Macatee, for their kind assistance in preparing this paper.

I wish to thank you for your patient attention this evening.

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Dr. Reyburn said that he spent Thanksgiving Day with some relatives in Cumberland, Maryland, and during the dinner a glass of water was offered him which came from the water pipes that supply the citizens of Cumberland with drinking water from the Potomac River.

It was putting it very mildly to say that he was perfectly astounded at the qualities of the water furnished for household purposes to the unfortunate inhabitants of Cumberland.

The water was turbid, yellowish, and tasted strongly of carbolic acid and some alkali, probably soda.

So nauseous was this fluid that it was utterly impossible for him to drink it, and the continued consumption of such a vile quality of water must be highly deleterious to the health of all who use it.

On inquiry he was informed that all the inhabitants of Cumberland who could afford the expense of boring wells had to resort to them or to rain water or distilled water for themselves and families. Unfortunately, however, the poorer classes of people living in Cumberland are unable to provide these means of relief, and are compelled to use the Potomac water as it is, with all its attendant injuries to their health.

What is the cause of this poisonous condition of the Potomac water? There are several causes but the most potent one is a gigantic nuisance in the location of the paper mill at Luke, near Piedmont, Maryland, near the headwaters of the Potomac, about twenty-five miles above Cumberland. This nuisance has existed for years. In August, 1898, Dr. Reyburn visited Piedmont and inspected this paper mill. The Potomac River at the point where the mill is located is comparatively a narrow stream. The mill seemed to receive about one-half of the river. After the water had passed through the mill the river stream seemed to divide itself into two portions—the half which had passed through the mill was black as ink, the other half which had not passed through the mill retaining its transparency. Since that time this mill has been enormously enlarged, and is now one of the largest paper mills in the world. To give an idea of the magnitude of this mill, it has the contract for a large proportion of the postal cards used and furnished by the Postal Department of the United States Government. The mill now utilizes nearly the whole of the river stream for its purposes, and pours its sludge and waste materials into the Potomac in such vast quantity as to defile the whole river.

It must not be supposed that the people of Cumberland have not resisted this outrage. For a number of years a bitter legal contest was waged by them to redress this wrong. A public spirited citizen of Cumberland, named Mr. Harvey Delaney, and other citizens, were very active in this matter. After a prolonged legal contest a decision was given by the Court in favor of the

citizens of Cumberland in 1900. The owners of the paper mill were directed to abate the nuisance, and to change their mode of manufacture so as to cease the contamination of the Potomac water. "With a smile that was childlike and bland," the paper mill owners promised to make the change; they changed their process of manufacturing the paper pulp to one that is worse than that formerly used.

Another source of contamination of the Potomac river water is the emptying into it of the Georges Creek. This stream receives the drainage of the Georges Creek coal fields and these waters are strongly impregnated with sulphur.

But this is not all the contamination that the Potomac water we daily drink receives. The filth from every water closet and privy located on the banks of the Potomac river and its tributary streams for the 175 miles of its course from Cumberland to Washington is carefully directed so that it will form a part of the Potomac river. When the river reaches Harpers Ferry and passes through the other towns in its course, each of them adds its quota of filth to swell the frightful total.

Whatever may be said of the components of the Potomac river water, we can certainly say of this beverage that it does not lack a variety of nastiness. The preposterous absurdity of this condition of affairs is apparent when we consider the fact that we tolerate an enormous paper mill at the headwaters of the Potomac to defile the water, and then erect a filtration plant (at an expense of over two million dollars) in Washington to purify the water thus contaminated. No wonder that Shakespeare puts into the mouth of Puck the words: "What fools these mortals be."

To remedy this condition two things are imperatively necessary: First. That the paper mill at Luke, near Piedmont, be compelled to change its method of manufacture so that none of the sludge of the mill shall be allowed to go into the Potomac River. Second. The banks of the Potomac River should be protected by laws prohibiting the drainage of sewage or filth into the river or its tributaries. If these two things are not done, in a short time the Potomac River water will become so foul as to be beyond even the capacity of our filtering beds to purify it or render it fit for human consumption.

Dr. George M. Kober said that the President's address gave a timely warning of the dangers to the community still possible from the use of the Potomac water, dangers which might easily be forgotten in the general satisfaction that has followed the completion of the filtration beds. He desired to call the Society's attention to the fact that the report of the Board of Consulting Engineers, the recommendations of which were in part followed in the construction of the plant, advised the purification of the water by sedimentation and sand filtration all the time, and by the use of a coagulant part of the time. The last mentioned treat-

ment had not yet been provided for, and a movement to secure it would probably soon be made. The Medical Society would, no doubt, be asked for advice as to the best methods to be used, and that an answer might be ready he offered the following resolution :

Resolved, That the President of the Society be authorized to appoint a committee of five for the purpose of inquiring into the efficiency of the city water filtration plant, and to make such recommendations as may be deemed necessary to secure a clear and wholesome water supply.

EYE LESIONS OF SYPHILIS FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.*

By WM. K. BUTLER, A. M., M. D.,

Washington, D. C.

From the time of the recognition of syphilis, in the latter part of the fifteenth century, as a distinct entity from other forms of venereal lesions, volumes have been written on the various manifestations and sequelae of the disease ; but whether it is due to a specific bacillus or whether it is ever entirely eradicated from the system are still mooted questions. It is far from my purpose, however, to enter into a discussion of some of these points, and much less would I tire you with even a description of *all* of its *eye* lesions. I wish rather to call your attention to a few of the commoner forms of such lesions which usually fall first into the hands of the family physician.

All oculists will agree that these are frequently mistaken for some mild form of ophthalmia, and valuable time is thus lost, in which irreparable damage ensues.

For convenience of presentation I would remind you that while the virus of syphilis may have a predilection for certain structures, it may, as you well know, attack all forms of tissue ; hence about the eye we may have lesions of the orbit, as a periostitis ; of the lids, conjunctiva, cornea, sclera, as well as many of the intraocular structures, particularly the uveal tract and retinal vessels.

From the standpoint of the general practitioner, however, it is much easier to divide these eye lesions into those which can be readily seen without any instrument of precision, viz : those which attack the appendages of the globe and the anterior seg-

* Read before the Medical Society, November 22, 1905.

ment of the globe, and secondly those affecting the fundus of the eye and for the diagnosis of which the use of the ophthalmoscope is necessary.

With this latter class we have nothing to do this evening except to remind you that they form a most serious menace to useful vision.

In the former class we would select three types of the disease, in the correct diagnosis of which there is frequently some doubt in the minds of general practitioners:

1. Interstitial keratitis, a frequent manifestation in early life of *inherited* syphilis, and in later life, of the *acquired* disease. We cannot assert dogmatically that *all* cases of this disease result from syphilis, but when seen associated with other well known stigmata of that disease, as Hutchinsonian teeth, enlarged glands, skin lesions, rhinitis, deafness, etc., we may safely assume that the eye lesion is of inherited specific origin.

The diagnosis of the disease is based upon the appearance of the cornea, which gradually becomes opaque, usually beginning near the margin of the cornea, and gradually extending over its whole area, which becomes more or less dense, depending upon the intensity of the disease. There is marked circumcorneal inflammation which fades in intensity from the margin of the cornea toward the fornix. I mention this because to some observers all forms of eye inflammation seem alike, a stumbling block in the diagnosis of common eye diseases. There is also more or less lachrimation, photophobia, some pain of varying intensity and loss of vision.

This opacity of the cornea, the most pronounced symptom of the disease, is differentiated from ulcer of the cornea, as the former is a non-ulcerative disease. It is differentiated from old opacities of the cornea, as the latter would be non-progressive in character and unattended with inflammatory symptoms.

A knowledge of the history of this disease may save some embarrassment, for instead of giving a favorable prognosis for an early recovery, the prognosis, while favorable, should be guarded, as the disease extends over a period varying from three months to three years, and sooner or later affects both eyes, *i. e.*, if only one eye is involved when the patient is first seen, we can be almost certain the other will follow in a few weeks or months.

The treatment is largely constitutional; in children, not the active anti-syphilitic method, but rather with reconstructive tonics, good food and general hygienic measures. Small doses of calomel may stimulate glandular activity and hasten absorption. Locally, atropin to keep the eye at rest, hot applications to relieve pain, but no poultices; and later stimulating applications of yellow mercurial ointment or insufflations of a stimulating powder, or instillations of dionin, which has recently come prominently into use, help in clearing the cornea.

The disease is essentially very slow and requires great patience on the part of both patient and physician.

2. *Primary* syphilitic eye lesions *may* occur, but in my experience are very rare. On the contrary, however, among the secondary symptoms, eye lesions, especially diseases of the uveal tract, are very common, notably iritis, a disease very easy to diagnose, and yet more frequently mistaken for conjunctivitis than any other eye lesion. The mistake would be of little importance if the end of the trouble ceased with the subsidence of the pain and inflammation, for, unless early recognized, posterior synechiae are almost certain to occur and cause much future trouble.

Iritis may very readily be differentiated from conjunctivitis by certain very palpable symptoms, which do not occur in the latter disease.

The deep-seated pain, varying in intensity from an ache to that of a most intense neuralgia extending over the brow down the side of the face and even to the teeth, differs very essentially from the smarting, burning pain of conjunctivitis. The character of the inflammation—a deep, rosy hue around the corneal margin, gradually becoming less intense toward the fornix—is quite unlike the superficial inflammation of the conjunctiva, brick red in color, and which can be moved over the eye by rubbing the lid over the ball, and lastly the sluggish reaction of the pupil or total loss of response to light stimulus, with the formation of posterior synechiae, as shown by the use of a mydriatic, easily confirms the diagnosis.

The prognosis is generally good if the case is seen early, but a sufficient number of cases when seen late terminate with complications, viz: post-synechiae, lymph in the pupil, or even secondary glaucoma with loss of vision, so that a guarded prognosis should here be given. Two such cases recently have emphasized this in

my mind, one resulting in the enucleation of an eye and the other in the loss of sight. These two cases are worthy of brief mention.

One occurred in a young woman who had recently had secondary symptoms, and the other in a young man who then had marked secondary eruption and in whom, notwithstanding active treatment, the eye was lost.

The course of the disease varies from eight to ten weeks, the milder cases sometimes get well earlier, and the neglected, complicated cases often continue for months.

Treatment: This is necessarily both local and constitutional. In the former, atropia is the sheet anchor, used and repeatedly used until either the pupil is dilated or this is found impossible. Leeches to the temple, hot applications for ten or fifteen minutes every hour or two if pain is severe, and even opiates may be necessary.

Dionin, one of the newer remedies used locally, has been found to be very useful. A 5 per cent. or 10 per cent. solution, or even the pure drug, placed in the eye to excite superficial irritation frequently helps.

The constitutional treatment varies with the preference of the physician as to his manner of giving antisyphilitic treatment, and if this contribution calls forth any discussion, I would be glad to hear the views of some of the syphilographers present as to their methods. Personally I have usually relied on the protiodid in increasing doses, depending on the effect, and where a very rapid action is desired, giving the oleat by inunction.

The sequelae of the disease, as may have been inferred from what has been said, result from posterior synechiae and plugging of the pupil with lymph, results which may happen when even proper early treatment is given, *i. e.*, when the infection overbalances the remedies used, and almost certainly follow neglected cases.

Among the eye lesions of the tertiary period we find some which are very similar to those of the secondary period, viz: iritis, iridocyclitis and all affections of the uveal tract, but in the class which we are considering, viz: those which can be diagnosed by inspection, we find at this time those diseases resulting from a gumma, be this intraocular or outside the eyeball as in the orbit, causing ocular paralysis, cellulitis or periostitis, simulating a malignant growth.

One illustration of this class may suffice: A woman aged about forty presented herself at my clinic for an inflamed eye. Inspection showed the globe fixed, *i. e.*, all muscles paralyzed, the eyeball pushed forward and intensely inflamed, with intense chemosis protruding between the lids, and vision impaired.

The diagnosis was uncertain, it being a question whether the condition was due to a retrobulbar abscess or a chronic cellulitis of the orbit, or a malignant growth. A number of punctures carried behind the globe failed to detect pus, a microscopic section of the mass left the diagnosis in doubt; another competent oculist pronounced it a malignant growth, which, if unquestionably true, the eye would have been removed. The case was cleared up by recovery of useful vision and subsidence of the inflammation under potassium iodid.

In conclusion, I would summarize this brief paper as follows:

1. Inherited syphilitic eye lesions are comparatively common, notably interstitial keratitis.

2. Primary syphilitic eye lesions are rare, but may occur, as such lesions occur on other parts of the body.

3. Eye lesions of the secondary stage are very common and much more serious in their results than either of the former lesions.

4. Eye lesions of the tertiary period are also quite common. These are also of very serious import, both as regards the anterior segment of the globe, of which we have been speaking this evening, but more so of the deeper structures of the eye, resulting in blindness from choroiditis, retinitis and optic nerve atrophy, a consideration of which has been beyond the scope of this paper; and if this recalls to your attention a feature of syphilis as it affects one of the most important organs of special sense, it has served its purpose.

I would be very glad to hear from some of the members present as to any experience they may have had from operations performed during the active stage of the disease, *i. e.*, Is surgical interference contraindicated?

2. What value is there in other forms of treatment than by mercury or the iodides, and are such enormous doses of the latter as are sometimes advised useful?

Dr. Shute, in opening the discussion, said that Dr. Butler's paper should be instructive not only to the general practitioner but to the specialist as well. There had been many suggestions of interest to Dr. Shute, as for instance the importance of the differential diagnosis between iritis and conjunctivitis. He thought it wise to include glaucoma in the category of diseases which may prove confusing to the general practitioner. He had had several cases of glaucoma in which irreparable mischief had been done by the instillation of atropin solution as a result of failure to recognize the true nature of the disease. Although the difference in the character of the congestion is a valuable differential sign, he thought that the best guide was the pupillary condition. In conjunctivitis the pupil was perfectly normal in its size and movements, while in iritis it was contracted and sluggish or fixed. A dilated and immobile pupil was very suggestive of glaucoma, especially in elderly persons.

About two per cent. of all cases of blindness are due to syphilis. As the uveal tract is most frequently attacked, secondary diseases of the retina and vitreous are very common, as these structures are dependent upon the uveal tract for nutrition. He thought that eye diseases due to congenital syphilis are very commonly milder than those due to the acquired form. Just why this should be so is difficult to explain. Is it because the transmitted toxin is weakened, or because the syphilitic fetus is so apt to die *in utero* that only the more resistant children are born and attain the age when eye lesions appear? Of course, it must be recognized that the virulency of syphilis, whether congenital or acquired, varies greatly in different cases.

The occasional appearance of gummata of the eye is an interesting fact, especially as the syphilitic changes in the ocular blood vessels are important; although active symptoms subside with the disappearance of the constitutional symptoms of syphilis, years afterward the diseased and weakened vessels might cause trouble. This fact raises the question whether syphilis is ever completely cured. The accidents secondary to blood-vascular changes are retinal hemorrhage, vitreous opacities, retinal atrophy, etc. Antisyphilitic treatment in such cases is of no avail. The nasal manifestations of syphilis are interesting to the oculist in that the inflammatory processes may extend up the nasal duct to the lachrymal sac and cause abscess. An interesting case of complete bony stenosis of the nasal duct had come under his care, in which the occlusion was due to a syphilitic periostitis. There had evidently been a growth of new bone of such density that a hand drill had to be used to bore out the channel. This patient had worn a silver canula for some time, but finally attained such a good result that the duct remains patulous without any epiphora, though the canula is no longer used.

The ocular paralyses of syphilis are of great interest; they are

met with in about 60 per cent. of the cases. Although usually curable, if improvement is not apparent after a few weeks of treatment the prognosis is unfavorable. While these palsies are for the most part late manifestations of syphilis, sometimes they are the first symptoms detected; and an ocular paralysis occurring without any apparent cause, should suggest a searching inquiry into the previous history for syphilitic taint. He had appreciated Dr. Butler's paper and he expressed his pleasure at hearing it.

Dr. Belt said that the subject had already been fully discussed, but he wished to call attention to one thing he did not hear Dr. Butler mention, namely, the occurrence of orbital abscess secondary to syphilitic periostitis. Dr. Belt agreed that specific ocular palsies are frequent, but he did not think that the prognosis should be as unfavorable as had been suggested. He recalled a case with absolutely no improvement after prolonged treatment with mercury and potassium iodide, but was finally cured by operation. He doubted if congenital ocular syphilis was milder than the acquired form. He had seen cases of such severity that even light perception was lost. The prognosis in syphilitic eye lesions in general should, however, be good under vigorous treatment. He had seen cases apparently hopeless entirely cured. He thought that ocular gummata were very frequent in the negro, but rare in whites.

He agreed that the differential diagnosis between iritis, conjunctivitis and glaucoma was most important. As conjunctivitis may accompany iritis and mask the peculiar congestion of the latter, he endorsed Dr. Shute's advice to watch the pupil. So also a fixed, dilated pupil should always suggest the propriety of testing the tension of the globe. He called attention to the fact that the intense, radiating pain through the temple and side of the head, which is such a prominent symptom of glaucoma, was frequently mistaken by the general practitioner for neuralgia.

Dr. R. S. Lamb said that he had greatly appreciated Dr. Butler's paper. As a method of differential diagnosis between iritis and conjunctivitis Dr. Lamb recommended the instillation of a 1 to 1,000 solution of adrenalin, which had the property of blanching the conjunctiva, thus causing the congestion of conjunctivitis to disappear, while it left unaffected the deeper seated congestion of iritis; and of a two per cent. solution of cocaine, which gave a maximum dilatation of the pupil, and yet lowered the intraocular tension, so that it eliminated the danger, in differentiating between conjunctivitis and glaucoma, of increasing the glaucoma.

He spoke of the usefulness of dionin in ophthalmological practice. Dionin was first introduced in 1880, as a substitute for morphia, but in 1896 it began to be used in eye work. Chemically, it was ethyl-morphine hydrochlorate. It produced some chemosis when instilled into the eye, but it was an excellent

analgesic in painful ocular affections. Among syphilitic eye lesions iritis and gummata were more frequent in the acquired form, while interstitial keratitis was the usual manifestation of the congenital variety. In the treatment of ocular syphilis he thought that the administration of mercury by inunction should be oftener used. Subconjunctival injection of cyanide of mercury, in a 1 to 1,500 solution, was productive of good results in many instances. He spoke of a case of syphilitic pemphigus, which had come under his observation, in which had occurred ulcer of the cornea, fistula of the lacrymal sac and ulcers of the lids as complications involving the ocular apparatus. He had also recently seen a case of chancre of the outer canthus.

Dr. Wilkinson said he wished to emphasize the danger among general practitioners of mistaking iritis for a simple conjunctivitis, although to the specialist the diagnosis seemed easy. In iritis, the appearance of the eye, the absence of discharge, the pain and the immobile pupil, were the distinctive signs. If any doubt persisted, the instillation of cocain solution should dispel it by producing no effect upon the pupil in iritis, but prompt dilatation in conjunctivitis. In tertiary syphilis, whatever other treatment may be used, potassium iodide should be given and vigorously pushed. Ocular lesions especially required heroic doses of the drug. He had often given as much as 120 grains three times a day. Large doses were borne as well as small ones; in one case, the patient had said that she could not take potassium iodide, but when it was administered without her knowledge, she had taken 120 grains *t. i. d.* without discomfort. It was important to change the vehicle frequently, and he was in the habit of giving it in sweet milk or in Vichy.

Dr. Polkinhorn said that in the treatment of interstitial keratitis, he had recently been using dionin with very good results. In these cases, the prognosis should always indicate the long duration of the disease and the probability of involvement of the other eye. He stated that many cases were most difficult to manage, and referred to the case of a girl, age 14, who had come under his observation about four years ago at the Episcopal Hospital. The patient had the typical expression and the Hutchinsonian teeth of inherited syphilis. The involvement of the cornea was marked and the disease progressed in spite of the utmost vigor in treatment, and eventually the other eye became involved. Although treatment was still persisted in, one eye was lost and the other greatly damaged; the disease extended to the ears, finally producing absolute deafness. When she went from under his care she had only sufficient vision to enable her to move about.

Dr. Dye said that the patient of whom Dr. Polkinhorn had been speaking had come into his service for her ear condition. She had had syphilitic ulceration of the throat, the process extending until the pillars and vault of the pharynx had been destroyed. Her

ears had been affected to such an extent that sound appreciation, even by bone conduction, had been lost, but lately she had improved somewhat and could hear loud tones of voice. She is now on potassium iodide. As regards the administration of drugs to these patients, every case was a law unto itself, and the dosage depended upon the individual peculiarities of each patient. They had to be watched and encouraged, and, even with the best care, the physician could not be sure that the drug was taken as ordered.

Dr. S. B. Muncaster related the case of a child, of two years, who as a result of interstitial keratitis, was led into his office as blind. The corneae were as white as the sclerotics. There was a history of *lues* in the father. Atropin was used in the eyes and the child's head was held over steam for a period three times a day, and massaged by rubbing with the fingers, the eyes nearly every day with ointment of yellow oxide of mercury. General tonics were administered and mercury was given by inunction. After two years of treatment the child has excellent vision, and is now attending school.

Dr. Hagner said that he knew little about the ocular manifestations of syphilis, but that he had observed a timidity in the use of mercury in the treatment of this disease. If quick results were needed, the mercury should be given by inunction or by hypodermatic injection. When administering potassium iodide, the doses should be large and the increase in dosage should be by 5 or 10 drops a day. The answer to the question whether or not syphilis is curable depended upon the specialty of the man of whom it was asked. The dermatologist and the genito-urinary surgeon would probably answer affirmatively, as nearly all the cases treated by these gentlemen usually recovered. The neurologist, on the other hand, believed it incurable, as he saw only the late manifestations of the disease and usually in the incurable form. In Dr. Hagner's opinion syphilis does not contraindicate operative measures if treatment is kept up.

Dr. Butler closed the discussion by expressing his thanks for the generous remarks that his paper had elicited.

SOMNOFORM.*

By EDWIN M. HASBROUCK, M. D.,

Washington, D. C.

Dr. Hasbrouck said that four years ago he had addressed the Society upon the nitrous-oxide-ether mode of producing anesthesia. Since that time he had administered this combination over 300 times, and he was still an ardent advocate of the method. In

* Read before the Medical Society, November 15, 1905.

the past year, however, a new anesthetic had come into prominence which demanded notice, and which he thought was destined to supplant all other methods of inducing quick anesthesia. The agent was called Somnoform and consisted of the following ingredients: Chloride of ethyl, 60 per cent., chloride of methyl, 35 per cent., and bromide of ethyl, 5 per cent. All these constituents had been used separately for the induction of anesthesia, but all had proven objectionable and dangerous. The combination, when properly used, resulted in an entirely innocuous mixture. Its effect was almost instantaneous, anesthesia being complete in about 40 seconds; the duration of anesthesia was about 70 seconds. There was apparently no by-effect produced by the drug, except perhaps slight stimulation of the heart. Recovery was as rapid as the induction of unconsciousness and no after effects could be observed.

Somnoform could not be used for continuous anesthesia, but was admirably adapted for chloroform and ether sequence. Its use eliminated the cyanosis of nitrous oxide and the unpleasant preliminary stages of the old methods of direct chloroform and ether anesthetization. About 1,000,000 cases of somnoform anesthesia were on record, with only one death.

He had hoped to secure a subject upon whom he could demonstrate the action of the drug, but he had been unable to do so, and therefore he would exhibit its use upon himself. He was convinced of the harmless nature of the anesthetic, and, as he had already used the drug upon himself on several occasions, he had no hesitation about repeating the experiment.

[Dr. Hasbrouck then requested Dr. R. S. Lamb to administer the somnoform to him, and the Society witnessed a very satisfactory demonstration of its effects. He quickly recovered from the anesthesia.]

He did not wish to assert that somnoform would prove universally successful and safe, but its use had been declared safe by many observers, and his own experience with it seemed to promise a great future. [He then described the inhaler and the containers in which the drug could be procured.] Care had to be used, he said, to preserve the fluid, as it was so volatile that in attempting to pour the liquid from the container to a glass the stream would be completely vaporized before the glass is reached. He had given somnoform in several cases with most gratifying results.

Dr. R. S. Lamb said that the preparation first came to his attention about two years ago, when he had obtained a vial of it through Dr. J. J. Richardson, who brought it from London. Dr. Richardson had seen it used in that city for producing anesthesia in operations for adenoids and in tonsillectomies. The McKensie tonsillotome was in general use there, and as tonsillectomy could be performed very speedily with that instrument, somnoform anesthesia was very satisfactory. Drs. Lamb and Richardson had used the drug in several private cases with pleasing results.

The combination of ingredients appealed to Dr. Lamb; as the bromide of ethyl was in such small proportion, only 5 per cent., he thought it could scarcely be harmful. As had been said, the literature contained about 1,000,000 cases of somnoform anesthesia with, so far as he could find, only two deaths, which was a record that could not be claimed for the other anesthetics. Many cases had doubtless never been reported, as, for instance, his own; and he questioned if the many instances of somnoform anesthesia in the dental practice in this city ever got into the literature. One dentist had mentioned to him a failure to secure anesthesia by somnoform; the woman's history revealed the fact, however, that she had required large quantities of chloroform and ether to induce anesthesia on other occasions.

About a year ago he had attempted to procure some somnoform for demonstration purposes but was unable to obtain it in this country. Recently it had been put on the market, but had been introduced chiefly through the dentists.

He had gone over the literature to find what had been written in regard to the merits of the drug and had found uniformly favorable comments. Two deaths only have been reported from its use, at least so far as he could find. In one case a man had been run over by a dray and was brought to hospital in shock; somnoform was given but the man died before anesthesia was complete. Another case, reported from Wales, showed at autopsy, fatty degeneration of the heart. In this instance, the somnoform may have been badly given, but he doubted if death was due to the drug. He admitted that the peculiar stimulating effect of somnoform upon the heart might induce fatal syncope. Deaths attributed to the use of ethyl chloride uncombined were probably due to an impure product.

Dr. S. B. Muncaster said that Dr. Hasbrouck had given somnoform for him on one occasion, and he was favorably impressed with its effects. It did not produce the rigidity of the muscles nor the intense cyanosis so objectionable in nitrous oxide anesthesia.

Dr. Randolph said that we were apt to be fascinated by the wonderful effects of new drugs. While he could not deny the possibility of a useful future for somnoform, he thought the profession would like to know more about its exact physiological

action. Somnoform was composed of three highly poisonous constituents, and he could not see how by mixing them a non-toxic product could be evolved.

He was inclined to doubt the accuracy of the 1,000,000 reported cases in which the drug was used; perhaps the majority of such reports came from the use of the anesthetic in dental work.

As a transient and momentary anesthetic somnoform might prove useful; but when given in combination with chloroform and ether, the combination of poisons must produce such complicated physiological actions as to preclude safe observation of the patient's condition. If the drug stands the test of long trial, it will be a valuable acquisition to medicine; but he doubted if the statistics would be as favorable when collected from miscellaneous complicated cases. He called attention to the history of so many other anesthetics which had been highly lauded until experience proved them to be ineligible. Somnoform may have come to stay, but he felt sure that sooner or later objections to its use would appear.

Dr. Balloch said that Dr. Hasbrouck had given somnoform to one of his (Dr. Balloch's) patients on whom he operated for rectal fissure complicated by pruritus. It seemed necessary to stretch the sphincter ani in order to relieve the symptoms, but the patient objected to taking either of the usual anesthetics on the ground of the distressing nausea, with which she previously had had experience. She agreed to the proposal to use somnoform, however, and Dr. Hasbrouck had given somnoform chloroform sequence, easily producing the pofound anesthesia necessary for rectal work. There was no post-operative nausea, and it was interesting to note that the pruritus ceased after the operation and has never returned.

Dr. A. A. Snyder said that Dr. Hasbrouck had administered this anesthetic for him in a case of cervical adenitis. To secure complete anesthesia, 15 seconds longer than the estimated time had been required. Dr. Snyder was so well pleased with the drug that he had no weightier criticism to make.

Dr. Hasbrouck closed the discussion by saying that any anesthetic could produce death if used long enough and in sufficient quantity; somnoform was no exception to this rule. All the reports about the agent were flattering, and in the London hospitals it had replaced nitrous oxide, a fact hardly probable unless somnoform had been proven harmless in the large number of cases in which it had been used. The fact that its ingredients were separately poisonous did not necessarily make it follow that somnoform was three times as poisonous as any one of them. Surely it had been used enough to give it a certain amount of confidence. The use of somnoform to introduce ether and chloroform anesthesia seemed to mimimize the after effects of the latter drugs. He wished it to be a matter of record that he presented somnoform as still on trial, but that he believed it had a great future before it.

CASE OF CHEESY TUBERCULAR MESENTERIC AND RETROPERITONEAL GLANDS IN AN ADULT.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

From a colored man, age 29, who worked in an ice cream saloon and was exposed there to cold and dampness. There was a family history of heart disease and asthma. His own history was that of rheumatism and influenza. His last sickness lasted apparently only three weeks. He had some cough; respiration shallow and labored; headache at intervals, lasting some hours, and some dulness over lower lobe left lung; but he had a good appetite and slept well; had occasional indigestion. Was in hospital ten days; temperature ranged from 98.6 to 102.4; pulse 120 at first, fell to 96; respirations went up from 26 to 32.

The *post mortem* examination showed emaciation. Lungs partly collapsed, some oedema in upper lobes; some bronchitis; scattered miliary tubercle, more especially in upper lobes. Bronchial glands enlarged and darkly pigmented. Heart and oesophagus normal. Stomach and intestines, including vermiform appendix, normal. The biliary ducts of the liver showed in places cystic dilatation and bile-colored granular contents. Spleen weighed 32 ounces and was studded with cheesy tubercle. Pancreas normal. Kidneys large, each contained one miliary tubercle. Suprarenal capsules normal. The mesenteric glands and all the lumbar glands much enlarged and cheesy, forming large masses.

Apparently the disease in this case was introduced through the intestinal tract, without affecting the intestines themselves, but affecting instead the mesenteric glands, and extending from these glands to the lumbar glands. From the latter, by way of the thoracic duct and blood vessels through the lungs and heart, the spleen became affected, as being also in part an adenoid organ, and finally, to a slight extent also, in a hematogenous way, the lungs themselves, and the disease was also just beginning to show in the kidneys. The course of the disease in this case is quite out of the ordinary in my experience, and seemed to me therefore of particular interest. *Tabes mesenterica*, too, is rather a disease of children. There was no history of diarrhoea in this case.

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* Reported, with specimen, to the Medical Society, November 15, 1905.

Dr. Acker said that it would seem from the large size attained by the masses of tuberculous glands that the diagnosis of tabes mesenterica should have been made during life, but as a matter of fact the condition was often very difficult to recognize. Many circumstances often presented which made it impossible to palpate the mesenteric nodes even when of considerable size.

CASE OF SARCOMA OF TIBIA.*

By E. M. HASBROUCK, M. D.,

Washington, D. C.

A white girl, 17 years old, single, from lower Maryland, was sent to me for treatment of a tumor involving the lower third of the left tibia. She gave the following history: Three years ago she fell and injured the left leg (at the site of the tumor); there was discoloration, swelling and tenderness; the tenderness persisted, and after six months a small mass appeared on the tibia, which remained stationary in size for a year and a half. She then injured the same region in another fall, and as a result of this second traumatism the tumor became extremely painful and increased very rapidly in size. Her physician treated it expectantly for a time and then incised over the mass, evacuating some cheesy material but not appreciably affecting the mass. As the patient continued to lose ground and the tumor to grow, she was sent to Washington, and on November 22 Dr. Hasbrouck amputated through the lower third of the left femur. The patient recovered well from the anesthetic and was in good condition when last seen. [Is now recovered and ready to leave the hospital.]

Dr. Balloch said that Dr. Hasbrouck's case was interesting on account of the freshness of the specimen, the preservation of the natural colors and the clear definition of the lesion. It was interesting also to note the history of traumatism as the starting point of the disease. But the main point of interest was the type of sarcoma present. The prognosis was better in the giant-cell and myeloid sarcomata, as these varieties are less apt to return. If Dr. Hasbrouck had not already obtained a microscopic diagnosis, Dr. Balloch hoped that the specimen would be examined as to its histology. In any event he congratulated Dr. Hasbrouck on his choice of the point of operation. It was always wise to go

* Reported, with specimen, to the Medical Society, November 22, 1905.

above a joint in such cases, where possible; and the rule to give a tumor a wide berth was the only safe one.

Dr. Hasbrouck said that a specimen had been sent for microscopical examination, but that he had not yet received the report. He wished to add to what he had said that there had been no history of syphilis in this case. [The growth was a small spindle celled sarcoma.]

CASE OF TUBERCULAR MENINGITIS IN AN ADULT.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

Last week I showed specimens from a case of *tabes mesenterica* in an adult; now a specimen of basilar meningitis, also in an adult. This man was 31 years old, colored, and a laborer. The family history is very good. The man himself, even at death, was in excellent condition; quite muscular. His work was largely that of handling pianos. October 13, 1905, he was taken sick with what was called chills and fever, but in a few days had apparently recovered and was at work. Was brought to hospital November 11 comatose, and the coma continued till his death, November 18, just one week after admission. The temperature appears to have been low throughout the disease; the highest record was 99.2; while the pulse ranged from 64 to 92 and the respirations from 20 to 28.

In addition to the meningitis, which was mainly basilar, with abundance of miliary tubercles and some exudate along the course of the vessels, especially of the base, there was a general infection. Miliary tubercles were scattered throughout the lungs, liver, spleen and a few in each kidney; those in the spleen were enlarged and cheesy. The bronchial, some mesenteric and the retroperitoneal glands were also enlarged and cheesy. The other organs were normal. The brain showed a general slight softening, more marked in the fornix, which was somewhat broken down. The ventricles contained more fluid than normal.

As in the case reported last week, it is probable that the cheesy mesenteric glands should be considered as the initial lesion in this case, causing hematogenously a general infection, involving lungs, liver, spleen and kidneys. As in the other case also, the intestines escaped, although here again we must believe that the infection was introduced through the alimentary canal.

* Reported, with specimen, to the Medical Society, November 22, 1905.

Dr. S. S. Adams said that Dr. Lamb's case was particularly interesting because it occurred in an adult. As far as his own experience went, tuberculous meningitis was rare in adults, and most cases occurred in children under six years of age. The case reported by Dr. Lamb was only the second case of the affection in the adult that had come under Dr. Adams' notice. Children, on the contrary, were frequent victims of tuberculous meningitis; two cases had come into Children's Hospital in the past month, both comatose at the time of admission; in his private practice he had met with three cases in the same period. The only other instance of the disease in an adult he had seen was some years ago; the question of diagnosis gave rise to a vigorous controversy as to whether the case was of cerebral syphilis or tuberculous meningitis; the autopsy proved the latter conclusion to be correct.

He said it was unfortunate that so often no history could be obtained from these cases, the patients entering the hospital already comatose. As in this case, the history of a recent illness with apparent recovery was significant. In children, inquiry often elicited the fact that there had been recently an illness resembling malaria with apparent recovery, the frank signs of meningitis appearing later.

In Dr. Lamb's case the general distribution of the lesions made the course of infection apparent, but in children, the most careful examination often failed to reveal tubercle elsewhere than in the meninges.

Dr. Keech said that he was surprised to hear Dr. Adams' statement as to the extreme rarity of tuberculous meningitis in adults. He had seen several cases in his experience in which, though no autopsy was made, the diagnosis was perfectly plain. One case was in a young woman, who, in addition to a bad family history, presented signs of tuberculosis elsewhere, and finally died with the symptoms of meningeal involvement. Another case was in a man, 35 years old. This patient had not been under his own care, but he had responded to an emergency call, and found unmistakable evidence of tuberculous meningitis.

Dr. S. S. Adams, in reply to Dr. Keech, said that he based his statement on his own experience in private work, and on eighteen years of experience in a general hospital. He asked Dr. Lamb to state the relative frequency of tuberculous meningitis in adults and in children.

Dr. Lamb said that he was unable to answer Dr. Adams more specifically than to say that the proportion of cases in adults was very small. A point of very considerable interest to Dr. Lamb was why infection of the meninges should occur independently of other tissues. His only explanation was that in certain cases the meninges were the point of greatest vulnerability.

CASE OF LOBAR PNEUMONIA FOLLOWED BY MENINGITIS.*

By S. S. ADAMS, A. M., M. D.,

Washington, D. C.

From a colored male child, 18 months old. Family history, negative. Previous history, negative. October 22, 1905, the child was taken sick with a severe cough and cold; fever high, no delirium; anorexia, bowels constipated; respiration very frequent, and the patient cried when moved.

Admitted to hospital October 28. Height and weight about the average. Patient lay on right side; facial expression anxious; no deformities or eruption; rectal temperature, 103.4. Lips parched, tongue coated, teeth normal, stomach slightly distended, bowels constipated. Dry râles heard over entire chest anteriorly and posteriorly. Breath sounds very rough on right side, and on left side bronchial breathing heard in small area on anterior surface, and over lower lobe of left lung posteriorly. Resonance normal over right lung, but much diminished over left lung anteriorly and posteriorly. Bronchophony over lower lobe of left lung posteriorly. Tactile fremitus increased over left lung. Respirations 52 and very shallow. No enlargement of heart. Pulse, 140.

October 29, condition unchanged, except breathing more tubular over left lung and dulness more marked. Temperature, 104.4; pulse, 132; respirations, 56. November 1, physical signs about the same. Temperature shows a marked fluctuation; two small normal stools. November 3, conditions in chest about the same, except large moist râles appeared in left lung. Several small normal stools. November 5, rales have disappeared from right lung; general condition much improved; breathes better, takes more nourishment and rests more quietly. Has several normal stools daily. November 7, temperature only 100; respirations, 26; pulse, 110. Left lung is clearing anteriorly, except at apex, where there is bronchial breathing and numerous moist râles. Posteriorly left lung shows tubular breathing still over lower lobe. Slight cough. November 8, this A. M. the temperature reached normal and remained so until 9 P. M., when there was a rise to 100; respirations increased to 56 and pulse to 140. About 10

* Reported, with specimens, to the Medical Society, December 6, 1905.

P. M. the child had a severe convulsion and continued having one every half hour or so during the night. Passed urine through the night. Stools normal. November 9, temperature gradually rose to 103; pulse 140 and respirations 42; physical signs the same. Convulsions continued during the day; pulse very weak and rapid; respirations very shallow; eyes turned upward and fixed; muscles very rigid. November 10, convulsions continued and respirations ceased after one very severe convulsion; temperature in the morning was 101. So little air went into the lungs that physical examination was unreliable.

Post mortem examination.—Brain showed marked serous exudate, otherwise appeared to be normal. Cultures taken from brain and grown on agar and bouillon showed pure cultures of diplococcus lanceolatus. Right lung slightly congested and gave evidence of a recent pleurisy, otherwise normal. Left lung solid from red hepatization. At left apes were six or eight small walled-off abscesses, the pus from these abscesses gave cultures of the diplococcus and staphylococcus. Heart and kidneys appeared normal. There were no enlarged bronchial glands or mesenteric glands and no evidence whatever of tubercle bacilli.

CASE OF ACUTE YELLOW ATROPHY OF THE LIVER.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

Colored woman, age 18; domestic. Her father and one brother are dead; cause of death unknown. Mother, two sisters and three brothers living. The patient had the usual diseases of childhood; no venereal history. Began to menstruate at 15. Gave birth to a child, instrumental delivery. In the eighth month of a second pregnancy she began to have hemorrhages from the uterus, night and morning. She was admitted to Columbia Hospital for Women and was there delivered of a child October 4, 1905; had post partum hemorrhage; no laceration; urine 1010, no albumin. Temperature during puerperium 97.6 to 100. She

* Reported, with specimens, to the Medical Society, December 6, 1905.

was discharged October 22 as recovered, but continued to have pains in lower abdomen. November 28 she suddenly became delirious. For three weeks she had had paroxysms of vomiting and took but little food.

Was admitted, unconscious, to Freedmen's Hospital, November 30; never regained consciousness; unable to take medicine or food by mouth. Slight discharge from vagina. Urine examination showed bile but no albumin. She was well nourished but intensely jaundiced. Abdomen distended. Heart beat 72–124 and weak; respirations 24–44 and shallow; temperature 97.2–102.4. Tenderness over bladder on pressure. Died December 3, the fourth day of residence in hospital.

The *post mortem* examination showed a well nourished body, much jaundiced. The scalp was somewhat congested; the dura yellowish, the brain somewhat softened but otherwise appeared normal. There were subpericardial hemorrhages; otherwise the heart was normal. Upper lobe right lung quite oedematous, lower lobe darkly congested and with subpleural and some internal hemorrhages. Old adhesions and collapse of left lung. Some bronchial glands were cheesy. Stomach and large intestine much distended with flatus; small intestine appeared normal; not opened. Liver small, weight 29 ounces (normal weight about 50 ounces), of a deep yellow color in patches, more especially in the right lobe; remainder of liver dark red. Some bile in gall-bladder. Spleen of normal size and firmness; Malpighian bodies perhaps a little enlarged. Kidneys showed dark congestion of medullary pyramids, cortex pale; capsule readily removed.

The peritoneum generally, both parietal and visceral, showed abundant small hemorrhages, and some of the blood had exuded into the peritoneal cavity and formed there soft coagula. This hemorrhagic condition was most marked in the greater omentum and over the intestines. Bladder much distended with dark urine; ureters distended and diameters increased two to three fold, apparently by pressure of adhesions which tied together all the pelvic organs; the adhesions were not very old. Uterus showed some subinvolution; cavity contained some muco-pus. Right fallopian tube also contained pus, right ovary converted into a large cavity filled with pus; the tube and ovary communicated. Left tube appeared normal, but the ovary was twice the normal size, quite succulent and showed a number of small cysts.

This case appears without doubt to be one of acute yellow atrophy of the liver. Of course there is a question whether there is really a distinct disease entitled to the name or whether the liver condition is simply a part of a general constitutional disease, in which we find not only the liver affected, but usually the kidneys and sometimes also the heart and spleen. The condition of the liver and kidney is much like what we find in phosphorus (and mercury) poisoning, except that in phosphorus poisoning the liver is usually enlarged rather than atrophied, and besides in phosphorus poisoning, according to some writers, the degeneration is rather an infiltration. However some pathologists believe that acute yellow atrophy and phosphorus poisoning are one and the same disease. Some pathologists, and especially within the last years, believe that acute yellow atrophy of the liver is due to an infection, although no definite relation has yet been made out between the disease and any bacteria. Wm. Hunter who has an excellent article on the subject in Allbutt's System of Medicine, holds the opinion that the jaundice in this disease is due to catarrh of the bile ducts, and that this catarrh is set up by some injurious ingredients secreted in the bile that cause degeneration of liver cells.

It may be added that the case I present is as nearly typical as is usually found. The disease itself is comparatively rare; it occurs mainly between 20 and 30 years of age and twice as often in women as men; and in women occurs preferably during the latter months of pregnancy or during lactation. Virchow believed that many if not most pregnant women have a fatty degeneration of the liver and kidneys, and it has been thought that the acute atrophy is an intensifying of what otherwise is perhaps a physiological condition. Curiously enough, most persons affected with the disease are of robust constitution, not debilitated.

My own opinion is that in the case I report there was an infection, a distinct septicemia, caused by absorption of bacteria or toxins or both from the pus tract of the tubo-ovarian abscess. The abundant subserous hemorrhages in connection with the other lesions would seem to establish this beyond a doubt. The question then would be whether the atrophy of the liver is part of the same infection process; and, according to the opinion of some pathologists, it would be so. [The liver showed microscopically fatty degeneration.]

CASE OF GASTRIC ULCER.*

By THOMAS N. VINCENT, A. M., M. D.,

Washington, D. C.

A white woman, age 65, was admitted to Providence Hospital, November 4, 1905, with a diagnosis of gastric ulcer; died November 7. Father and mother dead, causes unknown; one sister living and in good health; one sister living, probably tubercular. The patient has had measles, chickenpox and whooping cough when a child, making good recoveries from all. Has suffered the greater part of her life with nasal catarrh, which still persists to some extent, though the discharge is not so profuse as formerly. Several years ago she began to suffer at intervals from severe attacks of indigestion and has been compelled to use care in selecting her food. These attacks later became more persistent, and finally became continuous with acute exacerbations. These exacerbations usually occurred several hours after eating.

About ten or twelve months ago, exact time unknown, she also began to have occasional shortness of breath on much exertion. These attacks became more severe until sometimes she was compelled to sit down to rest after going up the stairs at her home. In April or May, 1905, she began to have attacks of dizziness after exertion and twice had fallen over in a faint but for no apparent reason. She had been troubled with nausea after meals for some time, exact period unknown, but covering several months. She had never had any severe attacks of vomiting nor had she ever vomited blood. Twice, however, during the last year she had noticed a little blood in her stools, but attached no importance to it.

Present Illness.—She was admitted to Providence Hospital, November 4, suffering from constant pain or soreness in the epigastrium. This pain had acute exacerbations, which usually came on late in the afternoon or after 10 o'clock at night, were very intense and radiated toward the sides and back, confining themselves, however, to the upper half of the abdomen. They gave her great agony and frequently caused her to double up with the pain. The pain was increased by pressure, and then seemed to be most acute in the region of the pylorus. She was anemic and had been losing flesh

*Reported, with specimen, to the Medical Society, November 15, 1905.

gradually for some time. She also had shortness of breath and occasional attacks of dizziness on exertion.

Physical Examination.—Skin sallow, some emaciation; patient somewhat nervous and very irritable. Genito-urinary system normal. Shortness of breath on exertion. Pulse small, irregular and frequent; apex beat two inches below and one-half inch internal to left nipple. Area of heart dulness somewhat increased toward the left. On auscultation a well defined murmur was heard at the base of the heart and was transmitted down toward the apex. Tongue somewhat coated. Constant pain with acute paroxysms in epigastrium, increased by pressure over pylorus. On palpation there seemed to be a small mass in the pyloric region.

November 5, 10 P. M., she vomited about a pint of bright red blood and was much exhausted. Pain very acute. Considerable shock. November 6, in the morning, she vomited again, mostly clotted blood with some fresh blood. Pain more intense than usual. At night she suffered agonizing pain in upper part of abdomen, back and sides, the point of greatest intensity being somewhat to the right of the middle line of the epigastrium. She was doubled up with the pain and tossing in the bed. Was given morphine sulphate one-quarter grain, and atropine sulphate 1–100 grain, with slight relief. At 11 P. M. the pain continued very severe, and morphine one-quarter grain, atropine 1-120 grain, were given, after which she seemed relieved, was quieter but weaker. On the morning of the 7th she died.

The treatment was as follows: morphia, atropia and ergot hypodermically; suprarenal extract by mouth; ice to epigastrium; rest in bed; food by rectum; whiskey as required.

The *post mortem* examination, made by Dr. Vincent, showed an ulcer in the posterior wall of stomach; heart small; some tubercle at the base of the right lung; old pleuritic adhesions on right side; pancreas, spleen and kidneys small; general anemia.

Dr. D. S. Lamb said that the ulcer in Dr. Vincent's case was neither large nor deep, and it was interesting to note how apparently so trivial a lesion could produce fatal hemorrhage. His experience in autopsy work had taught him that often very careful search was necessary to reveal a gastric ulcer, and that small ones might be entirely concealed by a little mucus.

Dr. Acker said that in this, as in all cases of gastric ulcer, the etiology was interesting. Dr. Vincent had mentioned the discovery

of tubercle in the lung, at the *post mortem*. Had there been any formation of tubercle in the stomach itself? The condition was frequently associated with anemias. Had the haemic murmur in this case preceded or followed the repeated attacks of hematemesis and the loss of strength dependent upon the ulcer?

Dr. J. Ford Thompson inquired if operative measures had been considered in the case. Laparatomy and excision of the ulcer might have been good practice in this instance, but he fancied that the patient was in a condition too precarious for intervention. If the strength and resistance of the patient had been already much diminished, of course no operation could be done, but in persistent cases of gastric ulcer, surgical treatment was now distinctly indicated. He had been unable to decide from the specimen the exact site of the ulcer, but wherever situated it could be reached through the laparotomy wound.

Dr. Kober inquired if the patient had been in the habit of sipping hot water. Experiment upon animals had shown that by the ingestion of water at 140 F., gastric ulcer could be artificially induced. He thought that the history of hot-water drinking would be interesting in connection with cases of this lesion.

Dr. Vincent in closing the discussion said that he had seen the patient seven or eight months prior to her admission to the hospital and she was then much emaciated and apparently in bad health. When she came to Providence Hospital, a profuse hematemesis occurred so quickly, that her condition became critical before a diagnosis could be made, and continued so until the illness had a fatal termination; on this account no operation could be attempted. He could not answer Dr. Kober as to hot-water drinking in this case; the patient's history had been obtained with great difficulty. Dr. Vincent was under the impression, however, that she had been a tea drinker.

CASE OF DIPHTHERIA OF THE AIR PASSAGES; DEATH BY ASPHYXIA.*

By D. S. LAMB, A. M., M. D.,

Washington, D. C.

A boy between three and four years old; a sturdy little fellow, in excellent health. The source of the infection has not yet been ascertained; and the attending physician, Dr. Huntt, of Laurel, Md., made a diagnosis of membranous croup and treated at first accordingly. The boy made a hard fight to live, and it seems

* Reported, with specimens, to the Medical Society, November 15, 1905.

probable, from the promptness with which he responded to the use of antitoxin, that if its use had been begun sooner his life might have been saved.

The *post mortem* examination showed a slight jaundice ; larynx, trachea and bronchial tubes filled with membrane and pus ; the intubation tube was found in place and also contained membrane and pus ; lungs studded with patches of broncho-pneumonia and in places collapsed. Heart showed dark clots in auricles and lighter clots in ventricles. Abdominal organs congested. A culture made at the Army Medical Museum showed the presence of diphtheria bacilli.

The boy was first noticed to be sick on Sunday, November 5 ; there was complete aphonia, which persisted. The family lived at Laurel, Md., and Dr. J. R. Huntt, of that place, was called to see the child on Tuesday. Dr. Wm. F. Taylor, of Laurel, also saw the child. On Wednesday, Dr. Huntt telephoned to Dr. Isabel Lamb, a relative of the family, the serious condition of the patient and suggested that she share in the responsibility of the case. Dr. Lamb, assuming that the case was one of diphtheria, asked Dr. J. R. Wellington to intubate. At no time was there any membrane visible in the fauces or pharynx. Dr. Wellington inserted a hard-rubber tube, which was coughed up a few hours afterward ; he then placed a gold tube of somewhat different shape ; this remained until removed after death.

Three thousand units of antitoxin were injected on Wednesday morning, the fourth day of the disease ; 4,000 in the afternoon ; 3,000, 6,000 and 4,000 on Thursday ; 8,000 and 6,000 on Friday. As stated, the boy responded promptly to each injection ; the cyanosis temporarily clearing up. Altogether, 37,000 units were used. The membrane was confined to the air passages. The cervical glands were not enlarged. His face was brightly flushed and he was conscious throughout ; temperature raised ; pulse up to 156 ; respirations 40 to 50. Constant tendency to asphyxia. The child was restless, but without delirium, stupor or convulsions. Had good appetite and there was no dysphagia except during the few hours when the first tube was in place. Frequent paroxysmal cyanosis. Tongue very red, breath not offensive. Hoarseness, stridulous breathing and spasmodic cough throughout. Mucus râles over both lungs.

Dr. Chappell said that the specimens were most interesting to him. On one or two occasions in cases of diphtheria, he had had reason to suspect involvement of the air passages below the larynx, but as in every instance the patient had recovered he was never able to verify his suspicions. In a recent case of diphtheria, in which the child had been ill four days without medical attention, he found the patient apparently choking to death. Intubation and the free use of antitoxin had been employed with prompt recovery.

He inquired if in Dr. Lamb's case the broncho-pneumonia had developed before or after the administration of antitoxin. He also wished to know if cultures had been taken. Such was his faith in antitoxin that he thought broncho-pneumonia must have been present before the antitoxin was administered, or that the child died of a pneumonia independent of the diphtheria infection.

Dr. Wellington said that for some reason the child had failed finally to respond to the antitoxin, although 37,000 units had been given. He thought that the broncho-pneumonia had developed after the administration of antitoxin had been begun.

Dr. I. H. Lamb said that in regard to the amount of antitoxin given in this case, she could be sure of only 12,000 units she herself had given. The local physician was opposed to its use, and thought that all possible good should be accomplished by the initial 3,000 units. A culture had been taken from a piece of mucus which had been coughed up after intubation, and had been sent to the Maryland Board of Health for examination ; the result was reported as negative. Cultures taken from the air passages removed *post mortem* had shown the diphtheria bacillus.

Dr. Acker said that unless antitoxin is given freely it is recognized that it does no good ; but he was surprised that no final good was obtained after the enormous dosage used in this case. Virchow had long ago made the observation that in croupous laryngitis there is a catarrh of the bronchi ; so that granting that the laryngeal disease was diphtheritic, he saw no reason why the lung condition should not be ordinary catarrhal pneumonia.

Dr. Hagner inquired if the streptococcus or other pus organisms had been found in the culture with the diphtheria bacillus. He thought that often the anti-diphtheritic serum was condemned, when the failure to secure favorable results was due to a mixed infection and a toxemia over which the diphtheria antitoxin had no control.

Dr. D. S. Lamb said that the bacteriologist's report from the culture was simply that the Klebs-Loeffler bacillus was present ; no other organism was mentioned. He thought that most probably there was a mixed infection. He could see no reason, however, why the diphtheria bacillus should not be causative of disease in the bronchi, and an inflammation in the bronchi readily involves the lung tissue.

HISTORICAL ACCOUNT OF THE INSTALLATION OF SLOW SAND FILTRATION OF THE POTOMAC RIVER WATER FOR THE CITY OF WASHINGTON.*

By GEORGE WYTHE COOK, M. D., LL. D.

Washington, D. C.

Mr. Chairman, Ladies and Gentlemen:

In response to the very courteous invitation of the Civic Center to the Medical Society of the District of Columbia to be present at this meeting, that Society has delegated to me the pleasing privilege of speaking briefly for it on this occasion. And, with the hope of preserving its true history, I have selected for the subject of my address a short account of how the method of slow sand filtration of Potomac water for the use of the people of Washington City was secured. I do this for two reasons: (1) Because of the appropriateness of the occasion. (2) Because the transactions of the Medical Society in behalf of the common weal are so seldom brought to the attention of a popular audience; in this respect differing widely from certain civic organizations whose transactions and presidential addresses very naturally find their way into the public prints with the current news of the day.

I deem it not inappropriate to say now that the Medical Society has always been alert as to the sanitary needs of this District, but I must remark that until within the last ten or twelve years, its suggestions met with such scant courtesy from the constituted authorities that its recommendations were few. That, however, is all changed now. The Society has been untiring in its labors with the Commissioners and with the Committees of Congress, in urging the passage of such laws as were clearly in the interest of public health and common safety. It secured the passage of a law prohibiting physicians from divulging the secrets of the sick-room. It inaugurated the effort and was mainly instrumental in securing the passage of the "Medical Practice Act"—a law that has for its purpose the requirement that persons desiring to practice medicine in the District shall be reasonably qualified therefor. This is clearly in the interest of common safety. It urged the passage of laws to prevent the spread of contagious diseases, and the law for the medical inspection of schools. It worked earn-

* Delivered, December 11, 1905, at the meeting of the Civic Center of Washington.

estly for the passage of the law regulating the milk supply, that the people might have clean and wholesome milk. It has repeatedly urged the passage of a law prohibiting the indiscriminate sale of poisons. It has heartily favored the extension of the system of sewers and the proper disposal of all the city's sewage. But its crowning labor and triumph lies in the fact that it was *mainly* through its efforts that the slow sand filtration of Potomac River water was secured.

It has been the common belief that running waters purified themselves as they flowed along for a distance of ten or twelve miles, and we were resting content in the belief that Potomac River water was free from disease-producing germs because none had been found in the numerous specimens of water that had been examined for them. The first published reference to the probability that the Potomac River water might be contaminated by pathogenic germs is found in an address entitled "A Contribution to the Etiology of Typhoid Fever," by Dr. G. M. Kober, a member of the Medical Society, delivered in Berlin in 1890 at the Tenth International Medical Congress. He says: "A study of the typhoid epidemic at Cumberland, which has prevailed there since the early part of December, 1889, shows that enteric fever was not present until the discharges from a case of typhoid fever living on one of the little runs which empties into the Potomac about 200 feet above the pumping station found their way into the city water supply. It is a notable fact that before and since the epidemic there has been a great amount of diarrhoea and dysentery, showing that whilst the drainage of hundreds of privies into the water supply caused these affections, yet it required a case of the specific disease to produce an outbreak of enteric fever. No case occurred where well water was used; a young woman belonging to a household using such water insisted upon drinking the river water and was taken with the disease, while the rest of the family escaped.

"Dr. W. W. Wiley, of Cumberland, writes me June 25, 1890: 'This epidemic first appeared in a young man, who returned from Ohio quite ill about the 10th of December, 1889; this case terminated fatally on the 20th of the same month. The next case appeared January 10, 1890, and since then we have had about 485 cases. Our population is 12,000. Every case but one can be traced to the use of our river water. I am not aware of any cases

occurring just below Cumberland, as no one used the water, but I am informed that several cases occurred at Hancock, which is thirty miles below Cumberland, and which could be traced to the drinking of the river water. Our rate of mortality was 8 per cent.'

"In passing I may remark, that the City of Washington is supplied with Potomac River water, and although the distance of the run is nearly 150 miles, it is a notable fact that enteric fever prevailed to an unusual extent, from December, 1889, to April 30, 1890. Dr. Pool of the Health Office informs me that the deaths for these months from typhoid fever amounted to 75, as compared with 42 for the corresponding months of last year. This cannot be explained by increased population—perhaps it is only a coincidence—but it may also confirm the conclusions of the English River Pollution Commission, that 'nothing short of abandonment of the inexpressibly nasty habit of mixing human excrement with our drinking water can confer upon us immunity from the propagation of epidemics through the medium of potable water.'"

February 5, 1894, Dr. Charles Smart, U. S. A., in an address before the Sanitary League delivered at the Columbian University in this city, emphatically declared that the high death rate in Washington from typhoid fever was attributed to polluted Potomac River water. Dr. G. L. Magruder, who was present in the audience, called in question the correctness of Dr. Smart's statement, and the views of some others, subsequently published in the *Evening Star*, coincided with Dr. Magruder's. At the next meeting of the Medical Society, February 7, 1894, Dr. Magruder brought to the attention of the Society the statement of Dr. Smart, and upon his motion, he and Drs. W. W. Johnston and C. M. Hammett were appointed a committee to investigate the causes of the prevalence of and high death rate from typhoid fever in the District of Columbia. On June 6, 1894, this committee, after much labor and painstaking, presented its report, together with numerous maps and diagrams and the following recommendations, which, after consideration by the Medical Society, were unanimously adopted:

"1. The immediate abandonment of all wells within the city limits, exception only to be made in case of the absence of the Potomac supply, and where the wells, after repeated chemical and bacteriological examinations, have been found to be free from all

possible sources of danger; but even these to be abandoned as rapidly as possible.

"2. Purification of the sewerage system already existing by replacing as rapidly as possible all damaged or defective drains.

"3. The introduction of new sewers in advance of other improvements in parts of the city not now supplied with drainage, and the extension of the system as far outside of the city limits as the rapidly growing population demands, so as to prevent soil contamination.

"4. The adoption of some system by which the lower sections of the city can be more completely drained, and the risks arising from the backing up of tidewater and sewage prevented.

"5. The final and safe disposal of the sewage.

"6. To make all existing privies, vaults or other receptacles of human excreta watertight, and by rigid inspection and penalties to prevent the danger from leakage and overflow.

"7. The early completion of the plans recommended by Colonel Elliott, in charge of the Washington Aqueduct, and now in course of execution, which have in view the sedimentation of the Potomac water, and ultimately the completion of works for filtration, the only proper method of purification.

"8. The suppression of all privies and the enforcing of the law to make sewer connections.

"9. Careful inspection of all dairies in the District from which our milk supply is drawn, and the enactment of a law by which no milk shall be sold in the District without a permit from the Health Office. The inspection shall cover an examination of the dairies, of all possible sources of infection, including the water supply.

"10. The urging upon the members of the profession of a careful collation of all facts bearing upon the mode of infection in each case and the advantage of reporting such facts to the Society, and the propagation of the doctrine that immediate disinfection of the stools is the first duty of the physician as guardian of the health of the community."

Immediately after the adoption of this report the Medical Society received an invitation, through Commissioner George Truesdell, from the Committee of the House of Representatives on the District of Columbia, and on June 14, 1894, through its committee, composed of Drs. S. C. Busey, W. W. Johnston, G. L. Magruder,

C. H. A. Kleinschmidt, G. Wythe Cook, S. S. Adams and D. W. Prentiss, presented the report to the Committee of the House, which after two hearings ordered it to be printed as a public document.

"On October 24, 1894, Dr. John S. Billings, who had recently returned from a visit abroad, read by request before the Society a paper entitled 'Filtration Methods of Water Supply and Sewage Disposal in Some Large European Cities,' in which the distinct statement is made that 'the securing of an abundant and pure water supply appears to be the most urgent need of Washington at the present time,' and adds, 'Sedimentation alone will not give us satisfactory results, and rapid filtration through steel cylinders, with or without the addition of alum or other chemicals, while quite as costly as the simple sand filtration, does not give an equal guaranty of the purity of the water.' This paper was published in full in *The Evening Star* of October 25th, and attracted wide-spread attention, because it set forth from actual observation and study the superiority of sand filtration over other methods."

January 30, 1895, Prof. W. P. Mason, of Troy, New York, delivered by invitation an address before the Medical Society on the subject of water supply of cities, in which he emphasized the necessity of sedimentation and the superiority of sand filtration over all other known methods.

In an interview published in *The Evening Star* of July 10, 1895, Col. George H. Elliot, U. S. A., Retired, at that time recently the officer in charge of the Washington Aqueduct, said: "The Potomac water is by no means unwholesome. It is as good a supply as is drawn from any American river. This is true, notwithstanding the fact that it is often so offensive to the eye as to make it appear to be unfit even for bathing purposes." Col. Elliot's conclusion was that Potomac River water not being unwholesome, the first cost of filtration works and their subsequent maintenance would entail an expense that would not be justifiable, and that for the present, at least, reliance should be placed on sedimentation. Dr. George M. Kober, in an interview published July 13, 1895, in the same paper mentioned above, and three days after Col. Elliot's interview, took issue with the views presented by Col. Elliot and declared it as his belief that the Potomac water was not only unpleasant to look at, but was unwholesome by rea-

son of its containing disease-producing germs; and that if it cost five times as much as Col. Elliot's estimate it would be a good investment.

The report of the Committee of the Medical Society on Public Health, January 26, 1896, says, "The agitation of the subject of the purification of the Potomac water is forced upon us, as physicians, by every recent addition to our knowledge of the subject," and declares that sand filtration is the "most convenient and effective method for the purification of drinking water," and "must be adopted ultimately for the water supply of Washington." At the same meeting the following, among other resolutions relating to sanitation, was unanimously adopted: "That the general water supply should be purified by sedimentation and filtration (the first being necessary at certain times and the second at all times) before it is admitted to the mains."

In 1898 Surgeon General George M. Sternberg, U. S. A., in a report to the Secretary of War relative to the filtration of the water supply of the District of Columbia, states the result of his investigations as follows: "So far as I am able to judge at present, the most reliable and practicable method of obtaining the object in view would be the construction of filter beds similar to those in use for purifying the water supply of London, Hamburg and other European cities, and at Lawrence, Mass., in this country." The method referred to is slow sand filtration. Owing to the sometime repulsive character of the water as it appeared in the glass and in the bath tub, there was a universal demand for its improvement, and the cry went up from all sections of the city for a clean, wholesome water. The Commissioners, the Board of Trade, the Business Men's Association, various independent organizations, the newspapers, and, indeed, the unanimous sentiment was for a purified water supply, and Congress was disposed to provide the means for it when the best way to secure it was pointed out. Accordingly in the Act making appropriations for the District of Columbia, approved March 3, 1899, is contained the following clause:

"For additional amount to enable the proper officer of the Government having charge of the Washington Aqueduct and water supply to the City of Washington to make an investigation of the feasibility and propriety of filtering the water supply of Washington, and to submit to Congress a full and detailed report

thereon, and to meet all necessary expenses of said investigation, five thousand dollars, to be immediately available."

Upon Col. A. M. Miller, Corps of Engineers, U. S. A., "in charge of the Washington Aqueduct and of the increase of the water supply of the City of Washington," devolved the duty of the investigation of the feasibility and propriety of filtering the water supply of the City of Washington. After a careful and painstaking investigation Colonel Miller rendered an elaborate report, dated March 28, 1900. He considered the source of the water supply, the character of the water shed, the first introduction of Potomac water through the aqueduct, the various reservoirs and the pumping station. He detailed the methods of filtration and described the experimental filters used. The slow sand filter "consisted of a cylindrical white-pine tank, eleven feet in diameter," in which were placed the filtering materials, with the necessary pipes, valves, meter, etc., to admit the raw water, control its velocity through the filter or rate of filtration, and dispose of the filtered water.

The mechanical filter used in experiments was erected by the New York Filter Manufacturing Company, and combined all the recent improvements in this method.

"It consists of a cylindrical steel tank, set up vertically and divided by a horizontal diaphragm into two compartments, the lower compartment serving as a preliminary sedimentation basin, and receiving the raw water and coagulant. The influent is so arranged that a centrifugal motion is given to the water on entering. From this lower compartment the water passes to the second or upper compartment, in which is situated the filtering device.

"The filtering device consists of a cylindrical steel vessel, smaller in diameter than the outer cylinder, resting on the horizontal diaphragm. In the bottom of this interior vessel are placed, set in cement, the strainers, which collect the filtered water and pass it to a main drain, whence it is passed through a regulator to the effluent of the filter.

"The object of the investigation was to ascertain whether the Potomac water, as delivered to the consumer at Washington at present, could be rendered by filtration, with either method, acceptable in appearance and hygienically fit for a domestic supply.

"An acceptable appearance of the water requires the removal of the turbidity to an extent which will render the water unob-

jectionable. Hygienic requirements are satisfied by the reduction of the number of bacteria to an acceptable quantity."

Under the direction of Col. Miller frequent chemical and bacteriological examinations of the raw and filtered water were made by skilled analyses.

The committee, Drs. Samuel C. Busey, G. Wythe Cook, George M. Kober, Z. T. Sowers and William C. Woodward, appointed by the Medical Society of the District of Columbia "to inquire into the relative merits of natural or slow sand filtration and mechanical filtration in their relation to the public water supply of this District," by the courtesy of Gen. John M. Wilson, Chief of Engineers, U. S. A., visited the experimental plant established by Colonel Miller and found the filters as described above. The mechanical filter was the *very best that could be made*, while the slow sand filter was necessarily merely in miniature of what it would be when in practical use. The product of the mechanical filter was a beautiful and clear water; that of the slow sand filter was not quite so transparent, but sufficiently so to suit reasonable requirements. The bacterial results were in favor of the slow sand filter. Colonel Miller believed that the bacterial efficiency of the mechanical filter was sufficient for safety, and as he desired to furnish the most attractive looking water, he recommended the mechanical method of filtration. The committee was no little perturbed at this outcome of Colonel Miller's investigations. It was confronted by this report from the War Department to the United States Senate, recommending the mechanical method of filtration, while it had strongly urged the natural or slow sand method, as the main contention of the Medical Society was for the greatest bacterial efficiency, and that no chemical or other agent be added to the water before or during the process of filtration. There was no means of knowing how the Senate Committee might view the matter, but it was certain they desired the best method; so Dr. S. C. Busey, though in feeble health, with his accustomed energy and pertinacity, with the committee of the Medical Society proceeded to analyze the report of Colonel Miller, and laid the results before the Society on December 5, 1900, "earnestly and unhesitatingly recommending the prompt installation of the natural sand filters." This recommendation was unanimously adopted by the Society on December 7, 1900, and a copy of the report was transmitted to Hon. James McMillan, chair-

man Committee on the District of Columbia, U. S. Senate, and was printed as Senate Doc. No. 27, Fifty-sixth Congress, Second Session.

February 19, 1901, Mr. McMillan, from the Committee on the District of Columbia, submitted a report on the relative merits of the mechanical and the slow sand systems of filtration for the water supply of the District of Columbia, in which he says: "After a very long and careful investigation the report from the War Department, known as Colonel Miller's report, took the ground that the water supply of the District of Columbia contained suspended clay in such fine particles as to make it practically impossible to use the slow sand system of filtration, and he, therefore, recommended the adoption of the rapid, or mechanical, system of filtration.

"This report was sharply attacked by the Medical Society of the District of Columbia, and, following the lead of the Medical Society, by the Board of Trade and the Business Men's Association. It was argued by these bodies that the use of alum as a coagulant was in itself objectionable, and that the mechanical process was inferior to the slow sand system as a means of removing those forms of pollution that are the cause of typhoid fever.

"An inquiry conducted by this committee in New York City on January 4, 1901, was attended by men who have made for themselves the highest reputation in the matter of the construction and operation of filters for public water supplies. No large filter plant, either in existence or projected, was unrepresented at that meeting. The plants at Lawrence, Mass.; Albany, N. Y.; East Providence, R. I.; Norfolk, Va.; Elmira, N. Y., were among those as to which direct testimony was given; and the projects at Philadelphia, Pittsburg, Louisville, Cincinnati, Paterson and New Orleans were discussed by men who had served or were then serving upon the boards of experts for those cities. No such representative gathering of filtration experts ever before took place in this country. It is true that the discussion of the subject of the filtration of public water supplies held at the meeting of the American Association of Civil Engineers in London, England, in July, 1900, brought together a larger representation of foreign experts; but the leaders of the discussion in London were also present in New York, and at the latter gathering the American problem had its fullest discussion.

"The result of this discussion established the fact that the slow sand filter, wherever it had been put into operation, had produced uniformly good results, both in clearing the water from turbidity and also in removing bacteria."

At that inquiry Dr. W. C. Woodward, in behalf of natural, slow sand filtration, conducted the examination of the experts in a masterful and efficient manner, and the examination of the mechanical method was managed by Colonel Miller. The report of the Committee of the Medical Society, known as Senate Document No. 27, was made the basis for exceptions to Colonel Miller's recommendation.

Subsequent to the inquiry held by the Senate Committee in New York City, and after the House of Representatives had passed a bill appropriating $200,000 for filtration purposes, without defining any method, Dr. G. L. Magruder succeeded in obtaining a hearing for the Medical Society before the sub-committee of the House of Representatives on Appropriations. At that hearing there were present Drs. D. S. Lamb, W. W. Johnston, G. Wythe Cook, Wm. C. Woodward, G. L. Magruder and D. P. Hickling, of the Committee on Legislation, and Drs. G. M. Kober, Wm. C. Woodward and G. Wythe Cook, of the Committee on Filtration. Arguments were presented by Drs. G. M. Kober, W. W. Johnston, D. P. Hickling and Wm. C. Woodward.

Fortunately, after the inquiry was held in New York City, the Senate Committee asked for a professional report from Mr. Rudolph Hering, Mr. George W. Fuller and Mr. Allen Hazen. These able and experienced experts, after a thorough review and consideration of all the conditions, made the following report: "In consideration of the full evidence we recommend the construction of a complete system of slow or sand filters, with such auxiliary works as may be necessary for preliminary sedimentation, and the use of a coagulant for a part of the time. There is no reason to believe that the use of this coagulant will in any degree affect the wholesomeness of the water." Upon the lines of this recommendation the authorization of the construction of the filtration plant was based. How much credit may be due the Medical Society for the accomplishment of slow sand filtration may be found in the fact that the report of its committee was the stumbling block of the mechanical filters.

We all rejoice in an abundant supply of clean, sweet water, and

it behooves us as good citizens to use it with as little waste as possible lest we unnecessarily increase its cost; yet, I am one of those who believe that whatever expenditure of money is necessary to procure an abundant and good supply of wholesome water is not extravagance.

DISEASES OF THE INDIANS, MORE ESPECIALLY OF THE SOUTHWEST UNITED STATES AND NORTHERN MEXICO.*

By ALES HRDLICKA, M. D.,

U. S. National Museum.

Members of the Medical and Anthropological Societies:

There lives today in this country a separate people of 300,000 individuals about whose anatomy and physiology, as well as pathology and related conditions, accurate knowledge is still quite restricted. This people are the Indians. It may astonish many of you to hear that there is as yet no definite knowledge about the size, form or structure of a single internal organ of the Indian, and not one function in the Indian has heretofore received a proper extended scientific attention. The Indian brain, for instance, has never as yet been described, and only two imperfect specimens are in preservation (both in the National Museum), and very few could tell what is the normal Indian's pulse rate or frequency of respiration. As to pathology and medicine in general, the knowledge extant is comprised in a fairly large number of notes and articles on the subject, but these are very scattered and mostly restricted to a single locality. Yet the Indians are a race that shows at first sight already some differences from the whites; and they have lived, and to a certain extent still live, in different environment, and with habits different from those of the white people. They ought to show numerous peculiarities in both normal and abnormal conditions of the body; and, the differences between their life and that of the whites being known, such peculiarities ought to prove highly instructive. The Indians deserve more scientific, general, systematized medical attention than they have received or are receiving. To impress this fact

* Read before the joint meeting of the Medical and Anthropological Societies, November 29, 1905.

upon you, more than to treat you to completed studies, is the object of this communication.

My paper consists of two parts, the first of which embraces personal observations and the second, data obtained from the physicians in the Indian service. The personal observations represent a part of the information gathered by me on six expeditions (1898–1905), among 38 groups or tribes of Indians, in the Southwestern United States and Northern Mexico. It should be borne in mind that these data do not apply to Indians beyond the region covered. The second category of statements was elaborated from the answers furnished in 1904–'5 to the Bureau of Indian Affairs (on a special blank, prepared by me) by the physicians of 103 Indian schools and agencies, from all parts of the United States. The actual value of the records from both sources should be regarded only as fair, for both series, it is well appreciated, embody many imperfections.*

On the whole, the health of the Southwestern and North Mexican uncivilized Indians is superior to that of the whites living in larger communities. The advantage of the Indian lies principally in the greater freedom from those various morbid conditions that arise through defective heritage, from those that in the white race frequently accompany such processes or periods of life as teething, puberty, menstruation, gestation, menopause and senility, and from malignant growths ; while the only disadvantage of the Indian consists in a possibly lesser resistance of his system to a few of the contagions.

Of the afflictions of definite parts of the organism in the Indians of the Southwest and Northern Mexico it is possible to state as follows :

Pathological conditions of the blood are very rare, but anaemia is occasionally met with in the later stages of malaria, or, in a light degree, in some of the taller school-girls, who have become debilitated. As to the blood glands, the spleen suffers secondarily in malaria, as in whites. The thyroid degenerates occasionally, particularly in certain regions and individuals (almost exclusively females) into goitre. Lymph glands are apparently the seat of but one affection, namely scrofula. Even this is rare

*The detailed data on which the remarks are based will be published in a Bulletin of the Bureau of American Ethnology. This abstract is given with the permission of the authorities of the Smithsonian Institution.

among the more primitive people, but a moderate number of examples can be found in every tribe of the more civilized Indians.

The prostate gland was found enlarged in a few instances. Affections of the breast glands are much less common in the Indian than they are in white women.

Diseases or defects of the circulatory apparatus are very infrequent. The writer has found among over 2,000 individuals examined but three cases of organic heart trouble (all valvular insufficiencies), and not one pronounced instance of advanced arterial sclerosis. No definite information could be obtained about any case of apoplexy, but some rather sudden deaths are remembered. Varicose veins are rare. Direct examination in many hundreds of individuals failed to show one very pronounced instance. Hemorrhoids are also infrequent. No case of a naevus came to observation.

Diseases of the respiratory apparatus are, on the other hand, relatively common and cause numerous deaths. Among the non-civilized tribes the most frequent and more serious of these affections is pneumonia; among the tribes on the road to civilization this begins to be rivaled by pulmonary consumption. This latter disease, which in all probability was extremely rare, if it existed at all, in the prehistoric Indians, is gradually becoming everywhere more common, even among the Indians of the Sierras. It attacks especially the adolescents and younger adults. It follows a rapid course in some individuals and moderately rapid in others, and is nearly always fatal; in a few only it becomes chronic. Pleurisy, judging from descriptions, is not uncommon at certain parts of the year, and milder grades of bronchitis and allied affections are met with quite often during the cold weather. No instances of asthma or of "false" or membranous croup were seen or heard of.

Disorders of the digestive apparatus are very common, more so than any other diseases in the Indian, but they are rarely, except in infants, of a serious nature.

Typhoid, against all expectation, is very infrequent.

Forms of bloody diarrhoea, or dysentery, often probably of malarial origin, attack the Indians in certain localities, especially in the lower parts of Mexico.

Intestinal parasites are heard of but seldom. No case was seen of appendicitis, peritonitis, ulcer of the stomach or any grave disease of the liver.

Constipation, while by no means as common as among the whites, and especially as among white women, is still heard of quite often.

A few individuals in every tribe die of dropsy, which indicates nephritis. Kidney disorders in pregnancy and eclampsia appear to be rare.

Diseases of the sexual organs, barring syphilis and gonorrhoea, are very seldom mentioned, or indicated by any external signs, among those who approach or are approached by the physician. The women usually deny their existence. Theoretically, perineal and uterus lacerations, prolapsus and other morbid conditions should be rather common, but whatever evidence is obtainable in the matter contradicts such an opinion. Amenorrhoea, dysmenorrhoea, or metrorrhagia occur, though rarely. Venereal diseases, while carefully, and in some instances apparently successfully, guarded against, prevail more or less in the tribes near railroad centers and near larger white settlements. Neither syphilis nor gonorrhoea is commonly, notwithstanding the unhygienic condition of the Indians, attended by great destruction of tissue or grave general consequences. The bones of the syphilitics, however, will ultimately become affected as in whites. In women, syphilis generally conditions premature births, and the infant is usually dead. Signs of hereditary syphilis in living children are very uncommon.

Diseases of the skin are nearly limited to cases of eczema, favus, or ulcers (pemphigus, and especially impetigo contagiosa) in the children, acne in adolescents or young adults, and some ulcers, due to neglect, in the older.

Of nervous and mental disorders, diseases or defects, headache is quite common ; vertigo is heard of occasionally ; tremors occur in those addicted to drink ; epilepsy is quite rare, weak-mindedness, insanity and paralysis much so, and idiocy is almost unknown. Of many nervous and mental pathological conditions nothing could be learned at all. Hysteria of light to moderate form is met with occasionally in growing girls.

Diseases and defects of the sense organs include numerous ophthalmias, some trachoma, and occasionally a cataract. Strabismus is very rare. Narrowing of the lids in consequence of chronic inflammation of the conjunctiva is common in old people. Corneal ulceration and opacities are not infrequent ; and in every

tribe, but particularly among some of the Pueblos, there is found a number, in some instances a relatively large number, of individuals who have lost the sight in consequence of some eye affection. In a few the cause of the loss of sight has been an attack of smallpox. Minor disorders of vision are common among the more advanced Indian scholars. Ear diseases and defects of hearing are quite rare, even in the aged. In a few tribes there are one to several deaf and dumb.

Caries of teeth are not rare, though much less frequent than in the whites. It is usually a premolar or a molar that is found affected. Occasionally the gums or alveoli become involved, which results in suppuration. Necrosis was never seen in the living or in the examined bones. Defect of the palate in a full-blood Indian has not been met with, and only one minor case of hare-lip came to notice.

Of contagious and infectious diseases, not before specially mentioned, the most dangerous and one from which none of the visited tribes has been spared, is smallpox. Localized epidemics of measles are quite common. The disease attacks children and adolescents, and occasionally, but usually in the absence of proper treatment, is attended with mortality much greater than in whites with the same disease. Where early hospital treatment has been afforded, fatal or even grave cases were rare. Scarlet fever, seems to be very uncommon. The writer could learn of no case of it, either personally or from the resident physicians, or the Indians in these regions. Whooping cough, on the other hand, is not very infrequent; it does not seem to be any more severe or dangerous than it is among the whites. Diphtheria, of moderate severity, existed in 1902 and at other seasons in the Albuquerque school for Indians; it also occurred at Zuñi. Influenza has been reported from a number of localities among the Southwestern Indians. Pneumonia has, in isolated cases, appeared in an epidemic form. Parotitis is seldom heard of. Malaria, known as "fever," "frios," or "calentura," occurs more or less, and in various forms, among all the tribes. Usually it is not fatal in the north and on the highlands, but assumes more dangerous including hemorrhagic and not seldom fatal forms in the valleys and especially in the lower coast lands of northern Mexico. Leprosy is not heard of; but there were met with a few cases of a condition allied to elephantiasis.

Malignant diseases, if they exist at all, which it would be difficult to doubt, must be extremely rare. The writer heard of "tumors," and saw several cases of the fibroid variety, but has never come across a clear case of an epithelioma or other cancer; nor has he as yet encountered unequivocal signs of a malignant growth on an Indian bone. Rheumatic affections are very seldom serious. They seem to be restricted to the muscular variety, lumbago, and the arthritis of senility. Of rachitis or osteomalacia not a trace was encountered either in the living or in the bones, and though goiter exists, there was found no case of cretinism.

Hernia is rare, and the few cases seen or heard of were nearly all of the umbilical variety and nearly all in children.

Pathological obesity does not exist.

Albinism exists principally among the Hopi and Zuñi.

Fractures of bones are infrequent; more rare than among white people.

In general, then, the morbid conditions that occur frequently and those that occur more rarely among the southwestern and north Mexican Indians than among average white Americans are as follows :

Frequent in Indians.—Affections of the gastro-intestinal tract, affections of the respiratory organs, affections of the eyes, muscular and senile arthritis, smallpox, measles, malaria, dysentery.

Rare in Indians.—Anaemia, affections of breast, diseases of heart, arteries and veins, asthma, affections of the liver, affections of the female sexual organs, many affections of the skin, dental caries, cancer, rachitis, hernia, idiocy (high grade), insanity, nervous diseases (excepting epilepsy), scarlatina, bone fracture.

A few special remarks should be made in this place concerning syphilis among the southwestern and north Mexican natives before the advent of whites. As already remarked, the disease in the Indians affects the bones as it does in the whites; therefore, if syphilis existed before the Spaniards reached this country, signs of it should be at least occasionally discovered in the ancient burials. But the bones from the old burials are, as a rule, free of any sign of the disease; and this is true of the bones from ancient graves in California, northwest coast and other localities, exclusive of some mounds. It is difficult to see, if the disease existed before the whites came, how, with the well known wide inter-

course among the Indians, whole great regions could escape it. It may be remarked that it is also absent in the older burials from Peru and other localities in South America. From some of the regions mentioned the osteological collections are extensive and made in a thorough manner.

The second part of this abstract deals with the analysis of the reports of physicians in the employ of the United States Bureau of Indian Affairs, the obtaining and utilization of the same having been kindly permitted by the authorities of that bureau.*

In this first attempt only a limited number of pathological conditions were inquired into, to assure prompt and more accurate returns. These conditions included: Albinism, goitre, cretinism, insanity, epilepsy, idiocy, deaf mutes, spinal curvatures and tuberculosis. Reports were obtained from 102 localities, on approximately 125,000 Indians, including some mixed bloods. The data regarding the different forms of tuberculosis, due to many difficulties encountered by the physicians, must be regarded as approximates only. Concerning most of the other condition the accuracy is greater.

The results of the inquiry were, in brief, as follows:

Complete Albinism.—In all there were reported 24 complete albinos (8 male adults and 5 male children, 6 female adults and 5 female children), living at the end of 1904, and 21 of these were among the Indians of Arizona and New Mexico.

Of *Goitre* there were reported 376 cases, from 36 localities; in 66, or nearly two-thirds of all the localities heard from, goitre was absent. The proportion to the total Indian population reported upon was 3 per thousand. Of the total of cases only 21 per cent. were in the males and 79 per cent. in the females, showing that among the Indians goitre is four times as frequent in the females as in the males. The female sex, it is well known, is more liable to the affection also among the whites and other races. Seven per cent. of the cases were in children and adolescents, showing that in quite a large proportion of instances the condition starts before the period of growth is completed. It was also plain that the disease did not depend on any condition inherent in the

* This part of the paper was accompanied by the presentation of tables with numerous statistical data, for which see the final publication in the Bull. B. A. E.

tribes, but was due to purely local agencies, the nature of which is not as yet well known.

Of *Cretinism* were reported in all but 3 cases, in as many localities; but a few additional cases of the condition in mild form are said to exist among the Chippewa in northeastern Wisconsin. It is remarkable that in all the localities where a cretin was found goitre was very rare, while, on the other hand, in tribes in which goitre was relatively frequent, there was no cretinism.

Insanity.—There were reported in all 48 cases of insanity of all forms, from 26 localities; no case existed in 76 localities. Of the 48 cases 33 were in males and 15 in females, which is in the proportion of 220 of the former to 100 of the latter. It is evident that insanity in the Indians predominates in the male sex, being there more than twice as frequent as in the females. Among whites, female insane exceed the male by only the very small proportion of 104 to 100. Of the 33 males but one, of the 15 females only 2 were young; all the rest (94.0 per cent.) being adults. There is but one tribe in which the proportion of insane is large, namely the Crow, where there is one insane to every 183 individuals of the population. The proportion of insane is among the Indians 1 to 2,730 of population, or 0.38 per 1,000, against 1 to 552, or 1.81 per 1,000, among the whites.

Of Epilepsy.—There were in all, 146 cases in 47 localities. Very probably all these cases were those of *grandmal* in various degrees. No cases were reported from 55, or a little over half of the schools and reservations. The proportion of epileptics to the total Indian population was 1.17 per thousand, which is quite near the mean proportion among whites. In central and southern Europe, an estimate puts the average frequency of the disease at about 1 or 1.5 per thousand inhabitants. In France it ranges in the various Departments from 0.5 to 3.4, and among the Italian conscripts from 1.3 to 5.1 per thousand.

Among the 146 epileptics, 76 were males and 70 females, hence nearly equal proportions of the two sexes. As to age, 35 of the males were adults and 41 adolescents and children; while among females 32 were adults and 38 young. It is evident that the disease develops in most cases during the period of growth.

As to *Idiocy, of all grades*, the total reported cases was 134 in 41 localities. In 61, or three-fifths of the schools and agencies, the condition was absent. The proportion of Indian feebleminded to

the total Indian population, as far as reported upon, is 1.07 per thousand. Among the total white population of the United States the proportion of similar morbid conditions was, in 1900, 1.55 per thousand. Many of the tribes are undoubtedly very free from idiocy in any grade.

There is shown some but not a general agreement between the frequency of idiocy and other neuropathic conditions in various tribes. Of the 134 cases 84, or over three-fifths, were males; 50, or less than two-fifths, females, giving the proportion of 168 to 100. Among the whites enumerated by the Eleventh United States Census the proportion of male to female idiots was 118 to 100. Sixty per cent. (51 individuals) of the male and seventy-four per cent. (37 individuals) of the female idiots were children and adolescents.

Deaf and Dumb.—The above report embraces 113 deaf and dumb in 39 localities; in 63, or three-fifths of the schools and reservations, individuals with this condition were not found. The proportion of deaf and dumb per thousand of population is 0.87 in the Indians against 0.68 in the whites of the United States. The excess in the Indians is very probably chargeable to neglect, and not a greater proportion of congenital deaf mutes. The influence of climate and heredity is suggested by the facts that the tribes in which the condition predominates live nearly all in cold regions, and that the majority of them belong to one people, the Sioux. Among the total 113 cases 74, or 65.5 per cent., were males, and 39, or 34.5 per cent., females, which gives the proportion of 190 to 100. Among the whites, according to the data of the Eleventh Census, the proportion of male and female deaf mutes was only as 116 to 100. The causes of this discrepancy in the two races are not apparent.

As to age, among the males 38, or a little over a half, among the females 10, or one-fourth, were adults, the remainder being adolescents and children.

Spinal Curvatures.—Under this heading are included curvatures of every variety and without distinction as to cause. It is safe to say that a large majority of the cases are due to tuberculous diseases and some are the result of injury.

The total number of cases amounts to 96, from 35 localities. No cases of spinal curvature were reported from 66, or very nearly two-thirds of the schools and agencies. The number of Indian

population to which the 101 reports apply being in round numbers 113,000, the proportion of the individuals with spinal curvatures per 1,000 population is 0.85. There were found no suitable data on the whites that could be utilized for comparison, but there is no doubt that the proportion of cases of the deformity in our race is larger. As to the nature of the curvatures, kyphosis seems to be the most frequent; then comes scoliosis, and then lordosis. As to the sex, 48, or exactly the half of the 96 cases, were males, and 48 females.

If the data on tuberculosis be referred to it will be seen that there is some correspondence between the prevalence of that condition and the frequency of spinal curvatures, pointing to the tubercular origin of the latter. The simple character of all the curvatures, the nature of which was specified (see detailed table in appendix), speaks also more for their tuberculous than rachitic origin.

As to tuberculosis, separate reports were requested for the pulmonary variety, for that of bones and joints, and for the glandular. There were in all 91 acceptable reports on tubercular diseases, applying to 107,000 Indian population. They gave 2,836 cases of the disease, of which 1,038 were of the pulmonary, 208 of the bone and joint, and 1,590 of the glandular variety. The given relation was 100 of pulmonary tuberculosis to 20 of that of bones and joints and 153 of glands.

The proportion of the several forms of the diseases to the population was as follows: pulmonary tuberculosis, 9.7 cases; tuberculosis of bones and joints, 1.95 cases, and glandular tuberculosis, 15.0 cases per 1,000 of population.

The writer searched in vain for suitable statistics with which the above could be compared. There are many and extensive data as to the mortality from tuberculous diseases, but not as to the morbidity. The deaths from phthisis among the United States white population vary according to localities from 1.5 to 5.5 and in Europe from 2 to 9 per thousand of population, or 1 in 5 to 1 in 7 of deaths; but these figures give no accurate clue as to the distribution of the disease among the living. In all probability the proportion of the several main varieties of tuberculosis is not much if any larger among the Indians *as a whole* than it is among the poorer classes of white people as a whole. There are, however, great differences in the tribes. In some the disease is de-

cidedly rare, while in others its frequency is appalling. Among the large tribes, the greatest sufferers are the Sioux, the least the Navaho. The geographical distribution is somewhat irregular; nevertheless the most involved are the northwestern and northern regions, west of the lakes, hence the humid and cold parts of the country, with the consequences of much indoor life, and greater chances of exposure and infection.

The frequency of other forms of tuberculosis corresponds in general to that of the lungs, but there are numerous exceptions.

All forms of the disease predominated somewhat in the males, and that in the following proportion: Pulmonary, females 100, males 110; bones and joints, females 100, males 124; glandular, females 100, males 111. As the excess of males to females in the total mainland Indian population is (1900) only as 101.5 to 100, it seems that there is actually a slightly greater predisposition to tuberculous diseases among the male than among the female Indians. It is well known that phthisis, at least, is also somewhat more common in the male sex among white people.

As to age, pulmonary consumption predominates in the adults in the proportion of nearly 3 to 2, but of both the other forms there are more cases in the young.

Pulmonary tuberculosis, to 100 adults, 67 children and adolescents; bones and joints, 126; glandular, 248.

The relation of tuberculosis to other morbid conditions can not well be studied from general statistics.

As to the prevalence of morbidity in general, it was seen that many of the northern and some northwestern tribes, such as the Sioux, Menominee, etc., showed a larger percentage of most of the pathological conditions inquired into than the tribes in other parts of the country.

The conclusion seems fully justified that the northern regions, including, especially, parts of Wisconsin, Dakotas and Montana, are at present, whatever the direct causes may be, the most unfavorable to the health of the Indian.

Dr. D. S. Lamb, in opening the discussion, asked Dr. Hrdlicka if the tables he showed represented the Indian *pure* bloods or were there some mixed bloods, to which Dr. Hrdlicka replied that he had tried to limit the tables to pure bloods, but, so far as the tables were based on reports of physicians at the Indian agencies, he could not absolutely guarantee that only pure bloods had been

included; but that so far as his own statistics went they were based on pure bloods. Dr. Lamb then stated that if any mixed bloods were included in the tables the conclusions were to that extent unreliable. So far as he knew there was no very important difference in the anatomy and physiology of the Indian from that of the white man. If it were a fact that there was no important difference, then we would not expect to find any important difference in the pathology. As a matter of fact the tables showed marked differences in the prevalence of disease between the tribes themselves, as much indeed as there appeared to be between the Indians as a whole and the whites.

He never had had any medical relations with the Indians, but he had had the peculiar good fortune to examine and study many bones from the Indian mounds, bones that showed evidences of disease and injury, and he had therefore formed some opinions as to the diseases and injuries of the Indians, at least those of the mound builder times, and besides had become somewhat interested in the diseases of the more modern Indian.

In the main his observation and reading agreed with the statements made by Dr. Hrdlicka, but there were a few points on which he wished to remark.

Dr. Hrdlicka stated that malignant tumors were rare among the Indians. This statement was particularly interesting because of another statement that had often of late years been made, namely, that malignant tumors were increasing in frequency and in proportion to the increase of civilization. Dr. Lamb had some doubts of the correctness of this statement as to increased frequency, because of the fact that these tumors were so common among the lower animals, both the domestic and those in captivity, to which the question of civilization could hardly apply. There was here, however, a large field for research work.

The reports from the Indian agencies mentioned the frequency of hysteria, of epilepsy, of idiocy and imbecility; but, as Dr. Hrdlicka stated, reports of insanity were rare. Dr. Lamb thought that this might be expected, because with us it was probably the "carking care" of our lives that favored the appearance of insanity, and the much simpler life the Indian led would seem to largely exempt him therefrom.

Dr. Hrdlicka mentioned the rarity of intestinal parasites; external parasites were, however, presumably a frequent trouble. Some agency reports mentioned many cases of "worms," and it would seem that the parasitic conditions would hardly be limited to only a few tribes. Indeed, when we recall the fact that both domestic and wild animals are very much infested with parasites, both internal and external, we would certainly expect that the Indian, who many times eats food that is either not cooked at all or only partially cooked, would be repeatedly exposed to parasitic infection. So, therefore, Dr. Lamb doubted if parasitism was so

rare among the Indians, knowing how frequently animal parasites are found among civilized peoples who so much more thoroughly cook their food.

Passing now to the question of the mound bones and what they teach as to the diseases and injuries of the Indians of the mound period, several thoughts suggest themselves, among the first of which is the question as to what diseases have been communicated to the Indians by the whites. It is only natural to think that communicable diseases that affected the whites were, when the whites were brought in contact with the Indians, communicated to the Indians. Indeed, since many centuries diseases of an infectious character have been carried from one place to another by travelers and by merchandise. From this fact arose the necessity of some form of quarantine. This facility of carrying disease has, of course, much increased during the last hundred years, the years of steam transportation. Time would fail to tell all the instances of the introduction of disease from one to another tribe or people. We all remember how the arrival of a ship at the Fiji Islands brought the measles to the people of those islands and nearly decimated the inhabitants. We recall the frequent spread of Asiatic cholera from the East Indies westward through Europe and America ; of influenza also, from Tartary westward ; and of the yellow fever from the West Indies to the United States.

The arrival of the European on the shores of the so-called New World meant the introduction of new diseases among the Indians—infectious diseases, of course. Just exactly what diseases were thus communicated, diseases with which the Indians had not previously been affected, he hesitated to say ; he would rather leave that to others more familiar with that part of the subject. But if we are to credit the belief of those persons who have devoted much time and effort to the investigation of the Indian mounds, that most of these mounds were made by the Indians before the advent of the European, then it logically would follow that the diseases found evidenced in the bones of such mounds were diseases that more or less prevailed before the arrival of the white man. It is to these bones that he had given some study, and not himself alone, but many other persons. The conclusion he had reached in the case of at least one disease was that it prevailed among the Indians before the arrival of Columbus. This disease is syphilis. The number of bones affected with what cannot be anything else than syphilis is so large that there seems to be no room for doubt that this disease prevailed among the Indians before the arrival of the whites. It is an old story to tell, but there are some who do not know it, that a belief prevailed in Europe that the return of the ships of Columbus to Europe carried the disease to Europe. There was no time now to elaborate the subject. This was the only communicable disease that he had satisfied himself existed precolumbian among the Indians. He had seen

in some mound bones what strongly suggested tuberculosis, but the number of the bones is so few that he hesitated to make a positive statement either way. There are some non-communicable diseases, such as spondylitis deformans, arthritis deformans, osteitis deformans, that have many representatives among the mound bones. A few bones show what looks like either lupus or malignant tumor of the bones of the face, and a few bones show what certainly looks more like rickets than anything else. Of course the injuries of bones and the repair of the same could hardly be expected to show any differences between Indians and other peoples.

The reasons why a mound burial was considered to be pre-columbian might be stated as follows: First, and especially among the coast Indians, there was a custom of burying with the dead the personal property he had owned during life, and this included, of course, those things he had obtained by barter with the Europeans; therefore it was very common to find in the mounds along with the skeletons many objects of European manufacture. Where no such objects were found the question arose among the mound investigators whether the burials were or not precolumbian. If many skeletons were found together and with them no objects of European contact then it seemed very probable that the burials antedated the arrival of the whites.

The age of the mound itself could sometimes be estimated by the age of the trees growing on it; trees that showed a growth of several hundred years aided, therefore, in arriving at the antiquity of the mound. Again, in some mounds there were two sets of burials, namely deep and superficial; with the deep burials there were no objects of European contact; with the superficial burials there were objects of such contact. It seemed logical to infer that the deeper burials antedated the arrival of the whites.

As to the spread of disease from one place or one people to another we have to recognize that this spread has its limitations. Some diseases are rather limited to tropical or semitropical countries; diseases that are slow to spread in a cold climate or in cold weather. The micro-organisms of these diseases can propagate and exist only under certain conditions of temperature, light and moisture, and where these necessary conditions are absent the germs will perish. Again, some diseases are carried by insects, the habitat of which is rather limited as to place and climate. It is plain, therefore, that there are very important limitations to the spread of disease, and modern sanitation consists in taking advantage of what we have learned concerning these things.

On one point Dr. Lamb wished to lay some stress, namely, that *post mortem* examinations of Indians were scarcely ever made, and therefore we were to that extent ignorant of the pathological anatomy of the diseases which affected the Indians, except as we interpreted the clinical symptoms by the same rules that we used

in interpreting the symptoms observed in the whites. But undoubtedly we would obtain much more exact knowledge if such *post mortem* examinations were made. The diagnosis has probably in some cases, and perhaps in many cases, not been correct; it depends, of course, to a large extent on the knowledge and experience of the physician. Here, then, is a vast field that has not been explored. It has been suggested that a hospital devoted to the Indian be established at some convenient place where a more scientific study of his diseases could be made than in the medical work of the Indian agency. Of course, such hospital would be under the control of the Indian Bureau.

Dr. Geo. M. Kober said that Dr. Hrdlicka and the Bureau of Ethnology are to be congratulated upon his splendid piece of work in studying the diseases among the aborigines of our own continent, a work of inestimable value to the modern physiologist and pathologist and may possibly pave the way for determining how many of the diseases, such as arterio-sclerosis, apoplexy, diseases of the liver, heart and kidneys, mental diseases and cancer, which appear to be constantly increasing in the Caucasian race, in spite of a positive decrease in the infectious diseases, are due to our artificiality of life, especially in the matter of food, which doubtless plays an important rôle in the so called chemical causes of disease, especially those originating within the body as a result of malnutrition, malfermentation and other defects of metabolism and physiological function. It is very fortunate that Dr. Hrdlicka has extended his studies also to the physiology and hygiene of the Indian, and his contributions will certainly serve to throw some light upon modern problems of metabolism.

Dr. Hrdlicka's summary of the relative frequency of certain diseases among the Indians accorded very closely with Dr. Kober's personal observations among the Piutes, Nez Percez, Spokanes, Colville, Coeur d' Alènes, Klamath and Modoc tribes, although, in the absence of clinical microscopy and autopsies, he was not prepared to state that the intestinal parasitic diseases and malignant internal tumors were quite uncommon. Dr. Hrdlicka, however, had accumulated considerable evidence to sustain this opinion, and it was certainly true that in Dr. Kober's observations, extending over a period of 18 years, he had never seen a case of epithelioma or other malignant growth of the breast or external tissues in the Indian.

The singular freedom from heart disease, arterio-sclerosis, renal and biliary disorders in the Indian strongly suggested that the increasing prevalence of these diseases in the white race was intimately connected with our present mode of life, just as the alarming increase of tuberculosis in the Indians of the present day is strongly influenced by their changed environments. Personally he had no doubt that the abrupt change from the tepee with its copious ventilation to a house with deficient light and air, and a

radical change from coarse cereals to refined flour and other carbohydrates, had established a vulnerability of the respiratory and digestive tract and otherwise prepared a suitable soil for the proliferation of the tubercle bacillus.

Gen. Forwood said that he desired to congratulate the essayist upon his paper ; he had been much interested in the statements contained in the communication and hoped that it would be published, as so much of the data presented was statistical. He was not prepared to agree with the author as to the influence of race upon diseases found among Indians. If the object of the paper was to show what sort of diseases affect Indians, he thought that the investigation might as well have been upon negroes, malays, or any other race. In his opinion race had very little to do with the kinds of diseases found among any given people ; the determining factors were environment, habits, occupation, degree of civilization, and the like; it was not race.

He had been stationed in the West from 1865 to 1870, and during that time he had seen wild tribes of Indians ranging on the plains of Kansas, Nebraska and the Dakotas. They were very primitive, nomadic tribes, wore the native costume, lived in tepees, owned vast herds of ponies, and spent their days in the open air and sunshine. They were far from the boundaries of civilization. Both men and women were strong and active, and their habits of life made them excellent gymnasts and great riders. An Indian brave would frequently ride from 60 to 75 miles in a day, changing ponies three or four times on the journey, and subsisting on jerked buffalo meat.

They were at that time a remarkably healthy people, as might be expected from their mode of life and the habit of frequently changing the camping place, which they did to avoid the necessity of cleaning up. Their food was largely buffalo flesh. The buffalo were plentiful in those days ; Dr. Forwood had seen a column of troops long delayed by a herd of bison crossing the track. The Indians followed the herds and subsisted upon them.

He had lived among the Indians and had treated them for all sorts of diseases, so that he felt somewhat acquainted with the class of diseases found among wild tribes. Many of these arose from their mode of life. They lived in the familiar tepees, and for warmth they built a small fire in the center, the smoke escaping through an opening at the top. Some smoke was retained in the tepee, so that much of their time was spent in an acrid, smoky atmosphere, while in the open they were subjected to exposure to high, dry winds, at times laden with dust. For these reasons the Indians had various skin diseases, never of a serious nor malignant nature, and also inflammatory affections of the eyes. So far as he knew, they were remarkably free from tuberculosis, and he had never seen a malignant tumor in a wild Indian.

He thought that there was not much to be gained by discussing diseases among the Indians after they had come into intimate contact with the whites; then there was nothing peculiar to Indians from a medical standpoint. Racial peculiarities with respect to disease could only be studied among wild tribes.

The Indians were very scrupulous about bathing, for which purpose they used the open streams. Their diet was largely of meat, but they were fond of berries and of certain roots, which they pounded into a meal. The nut of the *pinus pinea* was frequently used for food and was very nutritious. The buffalo meat was cured by drying; was never salted. It was cut into strips, and when exposed to the dry air of the plains quickly became dry, hard and brittle, and when so treated kept indefinitely. The Indians, as a rule, had very strong digestive powers. But they suffered much from catarrhal conditions of the air passages from exposure to smoke and dust.

They were all skillful riders, and, though seemingly most reckless, were seldom hurt. They occasionally had fractures of all sorts, and wounds received in fights were of frequent occurrence.

[Dr. Forwood exhibited a calculus removed from the bladder of an Indian chief in 1868.] Seven years prior to that date the man had been wounded by an arrow, which had entered the buttock, and, traversing the pelvis, lodged in the bladder. There was a history of bloody urine at the time the injury was received. This chief had been in the hands of many surgeons, and finally came to Dr. Forwood's notice. He obtained permission to examine the man, and discovered a vesical calculus, by the use of a sound. After the lithotomy operation several Indian medicine men were present, and, although not at all interested when the calculus was first shown, were astonished when section of the stone revealed the iron arrow head, and they pronounced Gen. Forwood "good medicine."

He was interested in finding out what surgical methods they had of their own knowledge, and found that there were very few. Charlatans were many, and incantations and charms were the most potent armamentarium they possessed.

He found that the dry air of the plains seemed to have an excellent effect upon wounds. He had treated a compound fracture of the femur, from a gunshot wound, in a young brave of 18, who had never before been among white men. Smith's anterior splint was used and the result was perfect, with no shortening.

The Indians applied counter-irritation by a sort of cupping, in pleurisy and lung affections. The suction was produced by the mouth of the medicine man, was very effective, and seemed to be original with them.

They also used a pessary made by rolling a ball of curly buffalo hair, which they introduced into the vagina. It proved satisfactory

and was to be commended in that it allowed the vaginal secretions to escape.

The management of labor was very interesting. He had contributed a description of the habits of the Indians in this event to a book entitled "Labor Among Primitive People," by Dr. Geo. Engelmann, of St. Louis. They set up a circle of bushes, with an overlapping entrance, for privacy; in the center two stakes were driven beside two small excavations. In one pit a hot stone was placed, and in the other, some loose earth. During pains the woman clung to the stakes, squatting over the pit containing the loose earth when any discharges were flowing and over the hot stone at other times. The placenta was secretly disposed of by some person specifically designated for that purpose.

Dr. Jos. Taber Johnson asked Gen. Forwood if the statements that Indian women had little trouble in child-birth, that they dropped out on the march, had their babies, and caught up with the tribe, were correct. He thought that if such little care was exercised tears and prolapsus must be frequent.

Gen. Forwood replied that the women did get up immediately and go on with the march. He believed that they were favored on account of the conditions under which they lived, and the statement was correct that primitive people were able to go through the natural processes more easily than the civilized.

Dr. E. L. Morgan said that he had lived at Che-we-lah, Colville Valley, State of Washington, from August, 1879, to the latter part of July, 1886, among the Calispels, Spokanes, a few Colvilles, Nez Percez, Iroquois, Cherokee, and other Indians, who were once employed by the Hudson Bay and the American fur companies.

He operated successfully on a case of hare-lip in an infant under one year old. He also saw an Indian brave about 20 years old with hare-lip and cleft palate, as horrible a deformity as any usually seen in surgical works illustrating the severer forms of this malformation.

The Indians bleed their patients by means of sharp flints and knives. For pains in the head, *more especially the eyes*, they make small gashes on the temples, and for aching in the chest they make two, three, or more long cuts on the thorax. He had often seen these scars, *especially on the body*. A cow's or buffalo's horn is cut off to the required length and a hole is made in the end, a piece of moss, fur, etc., is inserted into the inside of the horn against the opening at the upper end. This cup or crude artificial leech is placed over the incision and the doctor sucks the horn full of blood. For headache a tight band is sometimes placed around the head. For pains in the chest, pleurisy, pneumonia, phthisis, etc., a rope or band is tightly tied around the chest.

The so-called "medicine bag" of some Indian tribes is their charm against evil and a talisman for good luck, etc.

The Indians use a slat splint also hides, etc., in the treatment of fractures. This splint is composed of many thin strips of wood, tied together. Fur and other substances are laid on the limb, and the splint is applied and tied on the injured member.

He was called by a squaw to see a wounded Calispel, who was lying alone in a lodge about seven feet in diameter and of the same height, made of tulé mats placed on crossed poles, in the usual Indian style. This man's wound was over the region of the liver. While approaching his lodge he was heard crying out in a loud voice and rattling his rattle or magic wand. He was lying on a grizzly bear's skin, and around his head was a broad band of the animal's fur, while the skin itself was soaked in blood, and the ground was like a little pond of blood. The wound was dangerous. The half breed interpreter said he "*was making his medicine.*" The grizzly bear was his protector, and he was calling on him for assistance. This man had reached over from his horse, upon which he had mounted, to get a *Hudson Bay gun*, which went off and shot him in the side. It was said that he rode five miles to the camp and fainted. He finally recovered, with an extensive scar on his side.

At the Colville Mission on Corpus Christi a native was shot with a twenty-two caliber pistol. The bullet penetrated the thorax beneath the heart. Dr. Morgan saw him the next day. The Indian was on his hands and knees, and it was said this was the most comfortable position for him, although it may have been selected by his operating doctor. The "medicine man," was "blowing" the patient and sucking his back vigorously, which had not been perforated by the bullet, to suck out through the sound parts the piece of lead at the place where he applied his mouth. Every now and then he would spit out some blood on the ground, and no doubt he had cut his own gums before commencing his operations. The patient died that night.

At an Indian dance during the winter at Che-we-lah I saw a Calispel physician "blow" a man quite hard, first in one ear, then in the other, in the same manner that we would extinguish a lighted candle. This redskin either was knocked senseless, or seemed to be so, as a result of the ceremony. The Shaman would sing in quite a monotonous way in a low voice, though high pitched in character, and at times would raise the tune several keys higher, crying out in a loud voice and rattling the man all over the body. The rattle was a stick two feet long and one-third of an inch in diameter, to the end of which were attached claws, charms, etc.

This "medicine man" attributed scrofula amongst the Indians to the change of life of the aborigines, *the white man's food*, especially baking powders, *laying stress on bread soda* used in baking bread.

He attended an Indian woman who had a suppurating inguinal gland. She said that small bugs or insects were the cause of her disease and were eating her up. Still another native, a consumptive man, made a similar statement. This is an evidence of an Indian germ theory, or may be due to education imparted to them by their native physician, who always produces a cause of disease, that all may see for themselves.

Old Patrick McKenzie, a half-breed Chippeway, whose wife was a half-breed Cree, said that the aborigines use a powdered rattlesnake button to cure headaches ; it was taken internally.

The sweat house is used to cure fevers, rheumatism and other diseases. The sick rush out steaming, and plunge into icy cold streams. This, too, often in the past, greatly *added to the mortality of variola*. Dr. Morgan saw a case of measles in the morning, warning the patient of the danger of this practice, and was afterwards informed that the sweat house caused his death that night.

The Indians suck frosted fingers and toes. A friend of mine described his personal experience when he frosted his toes. He said their powers of suction were strong and painful.

They use a small jointed root larger than a lead pencil, that grows along streams in damp places, has a large green leaf, shaped like an elephant's ear. They break off one joint and powder it, giving it after labor, to control uterine hemorrhage, and if necessary they repeat the dose. It is used to provoke abortion.

There are many small sunflowers growing out of a bunch of leaves close to the ground on mountain and hill sides, a dwarf species. The seeds are sometimes eaten as a kind of food. The roots are baked, cut open while hot, and poultices made therefrom are applied to boils, enlarged painful glands, etc.

Heated boulders are wrapped in blankets, or furs, etc., and used for various purposes; for instance, are laid along a painful limb, in pleurisy, myalgia, and in the treatment of a stiff neck. Sometimes the blanket is made wet when a local steaming is desired. In the treatment of measles for cough, etc., a hot infusion of cedar berries is sometimes given to the patient, in some places as in Calispelum near Lake Calispel (or Kalispel).

The Indians use balsam of the silver fir, and castoreum. An infusion is made of the bark of a tree *that purges* and vomits according to the dose given. A half-breed showed a small plant that he called wild sarsaparilla growing on mountains. A plant found in the fields, which is not large, called rosin weed, having a pretty small pinkish or reddish flower, is said by settlers to grow on good land ; the root, they say, is used as an astringent. If pulled up it breaks easily, making the hands sticky. An infusion of the bark of the wild cherry is popular.

A powder is made of scorched leaves, which is dusted on ulcers and burnt surfaces. They treat a burn by dusting this powder

on it, and apply several layers of the leaves, holding this dressing in place by securely bandaging it.

An infusion of tamarach bark is used by the Indians as a wash for ulcers, etc. They know the poisonous effects of veratrum viride. At certain seasons, in damp places along streams, their horses eat a poisonous plant that usually proves fatal. They attempt to doctor their animals. I have seen them take a small knife and carefully cut in and around an injured pony's joint near the hoof. They also cut the gums for stomach troubles.

There is a soap bark for washing the head; for the same purpose the leaves of a low shrub; these leaves are small, long, glazed and green; the stem is long, tough, wiry and about the size of a finger. This shrub grows near the top of the mountain, usually the north side. Very large patches of it are seen. An infusion of these leaves is used as a hair tonic. A half-breed girl said that it made the hair soft and glossy, and increased its growth.

There are several very small lakes in Colville Valley, State of Washington, the waters of which are impregnated slightly with alkalies. But the White Bluff Prairie Medical Lake near Spokane Falls is heavily charged with chemicals leached out of the soil, and disintegrating basaltic and other volcanic rocks. This medicinal water was *used by the Indians*, and afterwards the whites, both externally and internally, in the treatment of diseases, especially as a bath in rheumatism, and for other *aches and pains*. Used also as a wash for ulcers. There was some evidence that cases of rheumatism were benefitted by a sojourn at Medical Lake. A company of white men used to boil down its waters, and they sold the powder obtained by the evaporation. Indians and others stated that if one washed his head or a greasy blanket in its water *a fine lather would be produced*—an akaline water.

Dracontium foetidum, or skunk cabbage, grows around Chewe-lah, Colville Valley; the Indians say that they never heard of any native treating a disease with this drug.

In the application of remedies in the treatment of diseases the Indian has his theories, and uses his limited powers of reasoning. His reasons for selecting a drug may be good, poor or exceedingly bad. *Not everything that the aborigines do is magical.* They experiment in many ways with roots and herbs, and are good observers on occasion, studying nature to a greater or less degree. They must not always be measured by the white man's standard.

The mere fact of autochthonous tribes of North America applying hot baths, their roots, herbs, etc., in the treatment of syphilis or any other malady does not necessarily prove that those diseases originated in the new world. The native American of centuries long past, before Columbus was born, found that roots or other medicines were beneficial in pains, aches of all kinds, skin diseases and rheumatism, and possibly facilitated the healing of

ulcers; quite naturally applied the remedies in the treatment of syphilis.

One old Indian "Medicine," a minor chief, having found that the tincture of iodine was good for aches and pains, especially in his own case (a rheumatic shoulder), to say nothing of it being of the right color to his experienced eye, insisted, in spite of a good prescription of chalk mixture, etc., that the abdomen of his sick child should be painted with the tincture of iodine, as a cure and as a sovereign remedy for any disease. The child's diarrhoea *was* cured. In his mind the iodine was the most important factor in the recovery of the child. The color alone may have carried conviction.

Maj. James O'Neill used to relate the following incident: Over in Idaho a doctor gave an Indian a red medicine, which had the most soothing and happy result. So charmed was an old chief with the physician's remedy, that he soon procured a supply of red oxide of mercury, and began his therapeutic investigations with one or more fatal results, it is said. The color here again was a leading factor in the treatment.

Dr. Morgan observed the following diseases: Two cases of diphtheria in females. Many cases of tonsillitis, pharyngitis, laryngitis, bronchitis; pneumonia and capillary bronchitis were comparatively rare; but few cases of pleurisy; phthisis and scrofula, were common. Measles, varicella and whooping cough; many patients with whooping cough died as a result of complications. Remittent fever was very rare, he saw only two patients. He saw one small fatty tumor of the thigh in a quarter-breed.

Pott's disease, one male and one female; palsy in a man about sixty years old; dyspepsia, diarrhoea, enteritis, anaemia, tertiary syphilis. But few cases of syphilis where the doctor was stationed. Gonorrhoea was quite prevalent. Hysteria among the half-breeds; mumps and cataract; coxalgia, two cases; seminal emissions; uterine hemorrhage; subclavicular dislocation of the humerus; fracture of the humerus, fractured ribs, pyarthrosis of knee. Eczema; eczema capitis, chronic eczema. Ascites; opreated on this case with trocar on two occasions; a boy ten or twelve years old. Staphyloma, conjunctivitis, keratitis; pterygium quite common, being either seen as single bands on both eyes, or double, extending from the inner and outer corners of the eye to the cornea; otorrhoea, functional paralysis. He was told that one squaw "operated for cataract," and probably successfully for pterygium, but not cataract. One Indian had valvular disease of the heart; he suddenly died; one squaw hung herself. A buck tried to commit suicide by shooting himself in the abdomen by means of a Hudson Bay gun; sometime afterwards, while gambling, he rose up, removed a plug of straw or grass from the opening, and allowed the pus to run out; then inserted another bunch of grass to close the opening. Several

persons saw this Indian with the wound in his abdomen and the plug sticking in it.

A Spokane chief said that he had heard of a chief who lived near Snake River, and who requested at the funeral of his son to be and was buried alive with the son.

Dr. Morgan heard of one case of a squaw dying in labor.

Dr. Hrdlicka, in closing the discussion, said that if syphilis had existed among the Indians in pre-Columbian times he could not understand why the Indians of that era in the southwest portion of the United States and in northern Mexico should have been exempt. Many bones of that period had been recovered there, and none presented evidence of the disease. With the habits of travel and intercourse common to the Indians of that time, he could not understand why it should have existed in one part of the country and not in another.

With reference to Gen. Forwood's statement that disease depends upon environment and not upon race, Dr. Hrdlicka said that it was well recognized in this day that racial traits were evolved as a result of environment, and that race and environment were almost synonymous terms. His studies were for the purpose of discovering the conditions as they exist today, and simple facts not hitherto published were interesting and important to know.

As the peoples investigated in his studies were confined to reservations, they were little exposed to foreign influences. In Mexico the Indians of some localities were as primitive as in pre-Columbian times.

His regret was that, in the pursuit of information, close physical examinations and microscopic studies could seldom be made, and pelvic examination of women was entirely out of the question.

His statement that intestinal parasites were not found among the Indians was in respect to tape-worms. Ascarides were fairly frequent. The existence of tape-worm was not only denied by the Indians themselves, but indirect evidence on this point could be adduced from the fact that of the 160 remedies used by them only one was a vermifuge.

PROCEEDINGS OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Wednesday, November 8, 1905.—Dr. T. N. McLaughlin, President, in the chair; over 60 members present.

Dr. S. S. Adams, Chairman of the Executive Committee, reported that at a meeting of that committee held November 6, the following recommendations were made to the Society: First, that the Medical Society cooperate with the Commissioners of the Dis-

trict of Columbia to secure the passage of a bill for the regulation of pollution of the Potomac River; second, that the Medical Society assist in a public movement to consider the "Pollution of the Potomac River" and the "Methods to secure a pure water supply for the District of Columbia;" third, that the Medical Society cooperate with the Commissioners of the District of Columbia to secure the passage of a "Pharmacy and Poison Law." The recommendations were accepted and the report approved.

Dr. J. D. Thomas reported a case of Septic Endocarditis, with specimen. Discussed by Drs. S. S. Adams, Briggs, D. S. Lamb, James Dudley Morgan, Hagner, Frank Leech, Fremont-Smith and Ruffin.

Dr. James C. McGuire read the paper for the evening. Subject, "The Etiology of Eczema, with report of cases." Discussed by Drs. McLaughlin, Crosson and S. S. Adams.

Wednesday, November 15.—Dr. J. D. Thomas, Vice-President, in the chair; over 60 members present.

Dr. Hickling reported a case of *Sebaceous Cyst*, with specimen. Discussed by Dr. D. S. Lamb.

Dr. Hickling said that the specimen was interesting because of its unusual site and because its walls had undergone calcareous degeneration. The walls were very thick and the cyst contained ordinary sebaceous material. The mass was removed from the scrotum of a colored man, who gave his age as 65 years, but was apparently older. The cyst was adherent to the cord, but not to the testicle. It was suspended between the sac of a hernia above and the testicle below.

Dr. D. S. Lamb said that when the cyst was brought to him it was entirely filled with sebaceous material; this had been allowed to dry, which fact accounted for the shrinkage of the specimen as exhibited. He found it difficult to account for the origin of the tumor; its location had suggested to his mind the possibility of its being a dermoid cyst. Although such cysts at times contain only sebaceous matter, the absence of other epithelial elements made it more probable that the specimen was a pure sebaceous cyst.

Dr. Vincent reported a case of Ulcer of Stomach, with specimen. Discussed by Drs. D. S. Lamb, Acker, J. Ford Thompson and Kober. See p. 357.

Dr. D. S. Lamb presented specimens from two cases: 1. Cheesy tubercle of glands; 2. Diphtheria of air passages. Discussed by Drs. Chappell, Wellington, I. H. Lamb, Acker and Hagner. See pp. 349 and 354.

Dr. Edwin M. Hasbrouck described a new anaesthetic, Somnoform, and exhibited the manner of its use and its effects. Discussed by Drs. R. S. Lamb, S. B. Muncaster, Randolph, Balloch and Snyder. See page 345.

Wednesday, November 22.—Dr. McLaughlin, President, in the chair; over 35 members present.

Dr. D. S. Lamb presented the following specimens:

1. *Calcareous deposit from the bladder of a colt.*

2. Tuberculous meningitis in an adult. Discussed by Drs. Adams and Keech. See p. 351.

The colt had a chronic cystitis. The deposit was rather dark green in color. Dr. J. B. Nichols examined it, and found that it consisted of calcium phosphate and calcium carbonate, colored with urinary pigment.

Dr. E. M. Hasbrouck reported a case of Sarcoma of the tibia, with specimen. Discussed by Dr. Balloch. See p. 350.

Dr. W. K. Butler read the paper for the evening. Subject: "Eye Lesions of Syphilis from the Standpoint of the General Practitioner." Discussed by Drs. Shute, Belt, R. S. Lamb, Wilkinson, Polkinhorn, Dye, S. B. Muncaster and Hagner. See p. 337.

JOINT MEETING OF THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA WITH THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON.

Wednesday, November 29.—Dr. McLaughlin, President of the Medical Society, in the chair.

A paper on "Diseases among the Indians" was read by Dr. A. Hrdlicka, of the Anthropological Society. Discussed by Drs. D. S. Lamb, Kober, Forwood and E. L. Morgan. See p. 372.

Wednesday, December 6.—Dr. McLaughlin, President, in the chair, over 58 members present.

Dr. D. S. Lamb, for the Committee on Editing the Transactions, reported that he had received a communication from the President of the Association of State Medical Journals, enclosing the tentative constitution of that body, and requesting the action of the Medical Society in regard to the proposed membership of the WASHINGTON MEDICAL ANNALS in the Association. Referred to the Executive Committee.

Resolutions were adopted to the effect that the Medical Society extended its earnest commendation to certain lay publications, and its appreciation of their efforts to suppress the nostrum evil.

Dr. D. G. Lewis reported cases, with specimens, as follows:

1. Fibro-myoma of round ligament.

2. Papilloma of rectum.

Dr. S. S. Adams reported a case of Pneumonia complicated by Meningitis, with specimen. See page 353.

Dr. D. S. Lamb showed a specimen of Acute Yellow Atrophy of Liver, and of Tubo-ovarian Abscess from the same case, and reported the history. See page 354.

Dr. Jas. Dudley Morgan read the essay for the evening. Subject: "Clinical Aspects of Rheumatic Endocarditis." Discussed by Drs. J. D. Thomas, Ruffin, Deale, A. F. A. King, Kober, Chappell, D. S. Lamb, Reyburn and Acker.

Wednesday, December 13.—Dr. McLaughlin, President, in the chair; over 95 members present.

Dr. McLaughlin delivered his presidential address. Subject: "The Pollution of the Potomac River." The address was illustrated with lantern slides, and was discussed by Drs. Kober and Reyburn. See p. 321.

The following resolution was adopted:

Resolved, That the President be authorized to appoint a committee of five, for the purpose of inquiring into the efficiency of the city water filtration plant and to make such recommendations as may be deemed necessary to secure a clear and wholesome water supply.

The chair appointed on the committee Drs. Kober, Cook, Hickling, Sowers and Woodward.

WASHINGTON MEDICAL ANNALS.

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EDITORIAL COMMITTEE.

D. S. Lamb, A. M., M. D., *Chairman*, . . "The Cumberland."
Walter A. Wells, M. D., ... "The Rochambeau."
Murray Galt Motter, A. M., M. D., . . 1815 Belmont Avenue.

Editorial.

The following is a list of journals published by State medical associations:

New York State Journal of Medicine.
Journal of the Medical Society of New Jersey.
Pennsylvania Medical Journal.
Washington Medical Annals.
Bulletin of the Kentucky State Medical Association.
Journal of the South Carolina Medical Association.
Journal of the Mississippi State Medical Association.
Journal of the Michigan State Medical Association.

Journal of the Missouri State Medical Association.
Journal of the Minnesota State Medical Association.
Journal of the Kansas Medical Society.
Journal of the New Mexico Medical Association.
California State Journal of Medicine.
The Maryland Medical Journal publishes the proceedings of the Medico-Chirurgical Faculty of Maryland.

Dr. Charles Wesley Keyes, a member of the Medical Society, died of apoplexy December 19, 1905.

THE NOSTRUM EVIL AND ITS CURE.

Perhaps never before have the professions of medicine and pharmacy been so stirred up over the question of patented and proprietary remedies. What is more to the purpose, public opinion, the final arbiter of affairs in this country, bids fair to be well informed through the crusade now being waged by *The Ladies' Home Journal* and *Collier's Weekly*. Even *The Literary Digest* publishes a full page advertisement, next the cover page, setting forth "Collier's Exposè of the Patent Medicine Fraud" with Death's head and serpentine scroll under the suggestive and alliterative caption "The Patent Medicine Trust. Palatable Poison for the Poor."

Unquestionably, the medical profession is itself largely to blame for the state of affairs. The charge that in many of our schools Pharmacology and Pharmacodynamics receive no attention at all, and that many others are characterized by a spirit of therapeutic nihilism, is all too true. The weekly medical press bears testimony to the widespread endorsement of the action of the American Medical Association in establishing the Council on Pharmacy and Chemistry, and the action of the Commissioner of Internal Revenue with reference to "Alcoholics Labeled as Medicines" will go far toward the establishment of the truth.

One phase of the question seems not to have received the attention it deserves. *The United States Pharmacopoeia* is, after all, our standard for preparations pharmaceutical, yet how few there are among us who know anything about it. With the introduction of average doses it has become more than ever a guide to the

prescriber. The general excellence of the Eighth Decennial Revision, which went into effect September 1st, is universally recognized. A Spanish edition, for use in the Latin-American republics, is now being planned for, the demand for it having been voiced in the recent Sanitary Conference held in this city. Through the liberality of the Board of Trustees of the Pharmacopoeial Convention every registered delegate to the convention of 1900 has received a complimentary copy, and very shortly the professors of materia medica and therapeutics in the principal schools of the country will be similarly complimented. Those responsible for the making of this standard work have made every effort to place in the hands of the profession the most potent weapon against the unprincipled vendor of remedies-for-revenue only. Unless all signs be misleading, the day may not be very far distant when the physician who prescribes a compound the ingredients of which and their action he does not know, may be liable for criminal malpractice.

There is one other book with which it would be well for us to be more familiar, namely The National Formulary, the new edition of which is almost ready for issue. Here one may find any number of elegant and tested preparations, better than the thousand and one proprietaries, about which we are so multitudinously circularized—if for no other reason than that they are of known, definite and constant composition. With these two books in mind, and at hand, we may turn a deaf ear to the presumptuous therapeutic admonitions of those manufacturers who spend more money for printers' ink than for pure and efficient drugs. There will, of course, always be certain of the newer remedies which, when properly authenticated, will find legitimate use in the hands of the profession before they can be included within the covers of any formal book, but let us take our knowledge of these through scientific channels, directly from those who labor in the laboratory *and* at the bedside, and not after they have been branded with the $-mark of the unscrupulous.—[M. G. M.]

Medical Miscellany.

Memorandum showing the relative prevalence of certain communicable diseases from Nov. 1, 1904, to Dec. 1, 1904, and the same period of 1905.

DIPHTHERIA.

1904.			1905.		
Cases on hand Nov. 1, 1904..	65		Cases on hand Nov. 1, 1905..	32	
Cases reported from Nov. 1, to Dec. 1, 1904.....	99		Cases reported from Nov. 1, to Dec. 1, 1905.....	99	
Cases discharged, recoveries		91	Cases discharged, recoveries		51
Cases discharged, deaths.....		4	Cases discharged, deaths.....		5
*Per cent. of fatal cases.....		.....	*Per cent. of fatal cases.....		.....
Cases on hand Dec. 1, 1904..		69	Cases on hand Dec. 1, 1905..		75
Total cases.....	164	164	Total cases.....	131	131

SCARLET FEVER.

1904.			1905.		
Cases on hand Nov. 1, 1904...	37		Cases on hand Nov. 1, 1905..	15	
Cases reported from Nov. 1, to Dec. 1, 1904.....	55		Cases reported from Nov. 1, to Dec. 1, 1905.....	20	
Cases discharged, recoveries, ...		36	Cases discharged, recoveries		12
Cases discharged, deaths.....		1	Cases discharged, deaths.....		1
*Per cent. of fatal cases.....		.....	*Per cent. of fatal cases.....		.....
Cases on hand Dec. 1, 1904..		55	Cases on hand Dec. 1, 1905..		22
Total cases.....	92	92	Total cases.....	35	35

TYPHOID FEVER.

1904.			1905.		
Cases on hand Nov. 1, 1904..	245		Cases on hand Nov. 1, 1905..	170	
Cases reported from Nov. 1, to Dec. 1, 1904.....	104		Cases reported from Nov. 1, to Dec. 1, 1905.....	81	
Cases discharged, recoveries, ...		105	Cases discharged, recoveries		96
Cases discharged, deaths.....		7	Cases discharged, deaths.....		13
*Per cent. of fatal cases.....		.....	*Per cent. of fatal cases.....		.....
Cases on hand Dec. 1, 1904..		237	Cases on hand Dec. 1, 1905..		142
Total cases.....	349	349	Total cases.....	251	251

SMALLPOX.

1904.			1905.		
Cases on hand Nov. 1, 1904..	0		Cases on hand Nov. 1, 1905..	4	
Cases reported from Nov. 1, to Dec. 1, 1904.....	1		Cases reported from Nov. 1, to Dec. 1, 1905.....	7	
Cases discharged, recoveries, ...		.....	Cases discharged, recoveries		6
Cases discharged, deaths.....		.....	Cases discharged, deaths.....		1
*Per cent. of fatal cases.....		.....	*Per cent. of fatal cases.....		.....
Cases on hand Dec. 1, 1904..		1	Cases on hand Dec. 1, 1905..		4
Total cases.....	1	1	Total cases.....	11	11

*The percentage of fatal cases is based upon the total number of cases which have definitely ended either in recovery or death, and not upon the number of cases reported or the number of cases which have been under treatment.

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